

=> file reg

FILE 'REGISTRY' ENTERED AT 16:21:33 ON 19 MAY 2004
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=> display history full 11-

FILE 'HCAPLUS' ENTERED AT 15:26:21 ON 19 MAY 2004

L1 22 SEA BENTHIEN ?/AU
L2 2656 SEA FABER ?/AU
L3 50 SEA JONSCHKER ?/AU
L4 32 SEA SEPEUR ?/AU
L5 51932 SEA SCHMIDT ?/AU
L6 14 SEA STOBEL ?/AU OR STOBEL ?/AU
L7 0 SEA L1 AND L2 AND L3 AND L4 AND L5 AND L6
L8 39 SEA (L2 OR L5) AND (L1 OR L3 OR L4 OR L6)
L9 QUE CAT# OR CATALY?
L10 26224 SEA DEODOR?
L11 11 SEA L8 AND L9
L12 2 SEA L8 AND L10
L13 2 SEA L11 AND L12
SEL L13 1-2 RN

FILE 'REGISTRY' ENTERED AT 15:30:41 ON 19 MAY 2004

L14 35 SEA (10108-73-3/BI OR 10377-66-9/BI OR 1067-25-0/BI OR
L15 6 SEA L14 AND SI/ELS
L16 29 SEA L14 NOT L15
L17 25 SEA L16 AND M/ELS
L18 11 SEA L17 AND O/ELS
L19 8 SEA L18 AND 2/ELC.SUB
D L15 1-6 RN STR
SEL L15 2,3,4,5 RN
L20 4 SEA (1067-25-0/BI OR 2031-67-6/BI OR 78-62-6/BI OR
780-69-8/BI)

FILE 'HCA' ENTERED AT 15:35:14 ON 19 MAY 2004

L21 85738 SEA L19
L22 3884 SEA L20

FILE 'LCA' ENTERED AT 15:35:21 ON 19 MAY 2004

L23 14809 SEA (INHIBIT? OR HINDER? OR IMPED? OR ARREST? OR REDUC?
OR REDN# OR RESIST? OR SUPPRESS? OR RETARD? OR PROHIBIT?
OR PREVENT? OR BLOCK? OR ELIMINAT?)/BI,AB
L24 20 SEA (INHIBIT? OR HINDER? OR IMPED? OR ARREST? OR REDUC?
OR REDN# OR RESIST? OR SUPPRESS? OR RETARD? OR PROHIBIT?

OR PREVENT? OR BLOCK? OR ELIMINAT? OR LESS? OR DECREAS?
OR LOW OR LOWER? OR DIMINISH?) (2A) (ODOR? OR ODOUR? OR
SMELL? OR FRAGRAN? OR AROMA# OR SCENT? OR ORGANOLEP? OR
AMBROS?)

- L25 44 SEA (INHIBIT? OR HINDER? OR IMPED? OR ARREST? OR REDUC?
OR REDN# OR RESIST? OR SUPPRESS? OR RETARD? OR PROHIBIT?
OR PREVENT? OR BLOCK? OR ELIMINAT? OR LESS? OR DECREAS?
OR LOW OR LOWER? OR DIMINISH?) (2A) (OLFACT? OR BOUQUET?
OR AMBROS? OR ORGANOLEP?) OR DEODOR? OR DEODOUR?
- L26 0 SEA ANTI(2A) (ODOR? OR ODOUR? OR SMELL? OR FRAGRAN? OR
AROMA# OR SCENT? OR ORGANOLEP? OR AMBROS? OR BOUQUET? OR
OLFACT?) OR ANTIDOR? OR ANTIDOUR? OR ANTISMELL? OR
ANTIFRAGRAN? OR ANTIAROMA# OR ANTISCENT? OR UNSCENT? OR
ANTIOLFACT? OR ANTIORGANOLEP?

FILE 'HCA' ENTERED AT 15:47:12 ON 19 MAY 2004

- L27 33058 SEA L24 OR L25 OR L26 OR DEODOR?
L28 26 SEA L21 AND L22
L29 2 SEA L28 AND L27
L30 QUE OXIDA? OR OXIDI? OR OXIDN#
L31 2 SEA L28 AND L30

FILE 'LREGISTRY' ENTERED AT 15:50:27 ON 19 MAY 2004
STR

- L32
- FILE 'REGISTRY' ENTERED AT 15:56:45 ON 19 MAY 2004
- L33 26 SEA SSS SAM L32
L34 SCR 2043
L35 5 SEA SSS SAM L32 NOT L34
L36 SCR 1918
L37 9 SEA SSS SAM L32 NOT (L34 OR L36)
L38 2518 SEA SSS FUL L32 NOT (L34 OR L36)
SAV L38 LAV464/A
- L39 3474 SEA {(LA OR CE OR TI OR ZR OR V OR CR OR MO OR W OR MN
OR FE OR CO OR NI OR CU OR AG OR ZN) (L) O)/ELS (L)
2/ELC.SUB
- L40 1757 SEA L39 AND TIS/CI
SAV L40 LAV464A/A
- L41 0 SEA L40 AND L19
L42 8 SEA L39 AND L19
DEL LAV464A/A
SAV L39 LAV464A/A

FILE 'HCA' ENTERED AT 16:07:38 ON 19 MAY 2004

- L43 16311 SEA L38
L44 467931 SEA L39
L45 1339 SEA (L43 OR L22) AND (L44 OR L21)
L46 13 SEA L45 AND L27

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L47      57 SEA L45 AND L30
          E COATINGS/CV
L48      7706 SEA COATINGS/CV
          E COATING MATERIALS/CV
L49      245853 SEA "COATING MATERIALS"/CV
          E COATING PROCESS/CV
L50      110602 SEA "COATING PROCESS"/CV
L51      QUE CAT# OR CATALY?
L52      12 SEA L47 AND (L48 OR L49 OR L50)
L53      24 SEA L47 AND L51
L54      5 SEA L52 AND L53

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FILE 'LCA' ENTERED AT 16:16:57 ON 19 MAY 2004

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L55      7647 SEA (FILM? OR THINFILM? OR LAYER? OR OVERLAY? OR
          OVERLAID? OR LAMIN? OR LAMEL? OR SHEET? OR LEAF? OR
          FOIL? OR COAT? OR TOPCOAT? OR OVERCOAT? OR VENEER? OR
          SHEATH? OR COVER? OR ENVELOP? OR ENCAS? OR ENWRAP? OR
          OVERSPREAD?)/BI,AB

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FILE 'HCA' ENTERED AT 16:17:21 ON 19 MAY 2004

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L56      12 SEA L53 AND L55
L57      5 SEA L29 OR L31 OR L54
L58      24 SEA (L46 OR L52 OR L56) NOT L57
L59      12 SEA L53 NOT (L57 OR L58)
L60      25 SEA L47 NOT (L57 OR L58 OR L59)

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FILE 'REGISTRY' ENTERED AT 16:21:33 ON 19 MAY 2004

=> d l38 que stat

L32 STR

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          21                23
          G3                O
          { 2                ||
G1~Si~G2      O~Ak      O~Ak      Ak @14      Cb @17
1  { 3      @6 7      @10 11
          G3
          22

```

VAR G1=14/17

VAR G2=OH/6/10

VAR G3=14/17/OH/6/10

NODE ATTRIBUTES:

```

CONNECT IS E1 RC AT 7
CONNECT IS E1 RC AT 11
CONNECT IS E1 RC AT 14
CONNECT IS E1 RC AT 17

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DEFAULT MLEVEL IS ATOM
GGCAT IS SAT AT 7
GGCAT IS SAT AT 11
GGCAT IS SAT AT 14
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE
L34 SCR 2043
L36 SCR 1918
L38 2518 SEA FILE=REGISTRY SSS FUL L32 NOT (L34 OR L36)

100.0% PROCESSED 350421 ITERATIONS 2518 ANSWERS
SEARCH TIME: 00.00.08

=> file hca
FILE 'HCA' ENTERED AT 16:21:59 ON 19 MAY 2004
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=> d 157 1-5 cbib abs hitstr hitind

L57 ANSWER 1 OF 5 HCA COPYRIGHT 2004 ACS on STN
138:57503 Preparation of scratch and abrasion resistant polymeric
nanocomposites by monomer grafting onto nanoparticles. Part 3.
Effect of filler particles and grafting agents. Bauer, Frank;
Sauerland, Volker; Glasel, Hans-Jurgen; Ernst, Horst; Findeisen,
Matthias; Hartmann, Eberhard; Langguth, Helmut; Marquardt, Barbel;
Mehnert, Reiner (Institut für Oberflächenmodifizierung, Permoserstr.
15, Leipzig, D-04318, Germany). Macromolecular Materials and
Engineering, 287(8), 546-552 (English) 2002. CODEN: MMENFA. ISSN:
1438-7492. Publisher: Wiley-VCH Verlag GmbH & Co. KGaA.
AB The effect of methacroyloxypropyl-, vinyl-, and
propyltrimethoxysilanes as surface modifiers and pyrogenic silica,
alumina, zirconia, and titania as nanoparticles on the viscoelastic
and surface mech. properties of the corresponding radiation-cured
polyacrylate nanocomposites was investigated. Polysiloxane shells
yielding core-shell nanocapsules were formed by acid-
catalyzed condensation of above mentioned alkoxysilanes on
the surface of the oxide nanoparticles. The crosslinked
polysiloxanes were anchored onto the particle surface by

condensation reactions with oxide OH-groups. The grafting of the different silanes was studied by temp.-programmed oxidn., photoelectron spectroscopy, and matrix-assisted laser desorption/ionization time-of-flight mass spectrometry. The modified nanoparticles as well as the coatings were characterized by multinuclear (^1H , ^{13}C , ^{27}Al , and ^{29}Si) solid-state NMR spectroscopy. Surface hardness of composite materials was examd. by abrasion, haze, and scratch tests. A comparison between different sources of silica nanopowders is presented.

- IT 1067-25-0DP, Dynasylan PTMO, reaction products with metal oxides 1314-23-4DP, Zirconia, reaction products with vinyltrimethoxysilane 13463-67-7DP, Titania, reaction products with vinyltrimethoxysilane (prepn. of scratch and abrasion resistant polymeric nanocomposites by monomer grafting onto nanoparticles)
- RN 1067-25-0 HCA
- CN Silane, trimethoxypropyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



- RN 1314-23-4 HCA
- CN Zirconium oxide (ZrO_2) (8CI, 9CI) (CA INDEX NAME)



- RN 13463-67-7 HCA
- CN Titanium oxide (TiO_2) (8CI, 9CI) (CA INDEX NAME)



- CC 42-4 (Coatings, Inks, and Related Products)
- Section cross-reference(s): 37

- IT **Coating materials**
(abrasion-resistant; prepn. of scratch and abrasion resistant polymeric nanocomposites by monomer grafting onto nanoparticles)
- IT **Coating materials**
(scratch-resistant; prepn. of scratch and abrasion resistant polymeric nanocomposites by monomer grafting onto nanoparticles)
- IT 1067-25-0DP, Dynasylan PTMO, reaction products with metal oxides 1314-23-4DP, Zirconia, reaction products with vinyltrimethoxysilane 1344-28-1DP, Alumina, reaction products with

methacroyloxy(propyl)trimethoxysilane 2530-85-0DP, Dynasylan MEMO,
 reaction products with metal oxides 2768-02-7DP, Dynasylan VTMO,
 reaction products with metal oxides **13463-67-7DP**, Titania,
 reaction products with vinyltrimethoxysilane
 (prepn. of scratch and abrasion resistant polymeric
 nanocomposites by monomer grafting onto nanoparticles)

L57 ANSWER 2 OF 5 HCA COPYRIGHT 2004 ACS on STN

134:256186 Photocatalyst coatings and formation of their films for
 removal of NOx from air. Mori, Kazuhiko; Nakamura, Mitsuru; Tanaka,
 Masayoshi (Nihon Parkerizing Co., Ltd., Japan). Jpn. Kokai Tokkyo
 Koho JP 2001081412 A2 20010327, 6 pp. (Japanese). CODEN: JKXXAF.
 APPLICATION: JP 1999-264024 19990917.

AB The coatings contain 40,000 wt. parts TiO₂, 1-200 wt. parts (as
 metals) water-sol. Pd compds. and/or water-sol. Pt compds. which
 enhance **catalytic** activity, and 1000-40,000 wt. parts
 binders. Alternatively, the coatings comprise components (A) contg.
 40,000 wt. parts TiO₂, 1000-40,000 wt. parts inorg. binders, and
 1-200 wt. parts water-sol. Pd compds. and/or water-sol. Pt compds.
 and components (B) contg. 200-2000 wt. parts alkoxysilanes and liq.
 alc. solvents. The photocatalyst coating films are formed by
 applying the coatings on substrates an heat-drying the coating
 layers. The coatings show good film-forming properties and high
 efficiency and durability in NOx removal.

IT **13463-67-7**, Titania, uses
 (photocatalyst coatings contg. TiO₂ and Pd and/or Pt compds. for
 removal of NOx from air)

RN 13463-67-7 HCA

CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)



IT **1185-55-3**, Methyltrimethoxysilane
 (photocatalyst coatings contg. TiO₂ and Pd and/or Pt compds. for
 removal of NOx from air)

RN 1185-55-3 HCA

CN Silane, trimethoxymethyl- (6CI, 8CI, 9CI) (CA INDEX NAME)



IC ICM C09D201-00

ICS B01J023-44; B01J035-02; B01J037-34; B05D003-06; C09D005-00

- CC 59-6 (Air Pollution and Industrial Hygiene)
Section cross-reference(s): 42, 74
- IT **Coating materials**
(photocatalyst coatings contg. TiO₂ and Pd and/or Pt compds. for removal of NO_x from air)
- IT Air purification
(photocatalytic oxidn.; photocatalyst coatings contg. TiO₂ and Pd and/or Pt compds. for removal of NO_x from air)
- IT **Oxidation catalysts**
(photooxidn.; photocatalyst coatings contg. TiO₂ and Pd and/or Pt compds. for removal of NO_x from air)
- IT 7440-05-3D, Palladium, chloramine complexes, uses 7440-06-4D, Platinum, chloramine complexes, uses **13463-67-7**, Titania, uses
(photocatalyst coatings contg. TiO₂ and Pd and/or Pt compds. for removal of NO_x from air)
- IT **1185-55-3**, Methyltrimethoxysilane
(photocatalyst coatings contg. TiO₂ and Pd and/or Pt compds. for removal of NO_x from air)
- L57 ANSWER 3 OF 5 HCA COPYRIGHT 2004 ACS on STN
- 133:312622 A low weight resistant porous glass fiber having physical, chemical or biological properties. Kiwi-minsker, Liubov; Iouranov, Igor; Renken, Albert (Ecole Polytechnique Federale De Lausanne, Switz.). Eur. Pat. Appl. EP 1044935 A1 20001018, 13 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1999-810305 19990413.
- AB A low wt. resistant porous glass fiber with a developed sp. surface area of 5-120 times the outer surface of a std. glass fiber, and a material having phys., chem. or biol. reactive properties deposited on the developed surface area of porous glass fiber are described. Another low wt. resistant porous glass fiber with a developed sp. surface area of 20-200 times the outer surface of a std. glass fiber is presented. The developed surface of porous glass fiber is coated with a support material for a material which has phys., chem. or biol. reactive properties and which is deposited on the intermediate support material covering the porous glass fiber. Corresponding prepn. processes and various uses are described.
- IT **2031-67-6**, Methyltriethoxysilane
(coating precursor; manuf. of low wt. resistant porous glass fibers modified by metal oxides)
- RN 2031-67-6 HCA
- CN Silane, triethoxymethyl- (8CI, 9CI) (CA INDEX NAME)



IT 1308-38-9P, Chromium oxide (Cr2O3), preparation
 1317-38-0P, Copper oxide (CuO), preparation
 13463-67-7P, Titania, preparation
 (coating; manuf. of low wt. resistant porous glass fibers
 modified by metal oxides)
 RN 1308-38-9 HCA
 CN Chromium oxide (Cr2O3) (8CI, 9CI) (CA INDEX NAME)
 *** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
 RN 1317-38-0 HCA
 CN Copper oxide (CuO) (8CI, 9CI) (CA INDEX NAME)



RN 13463-67-7 HCA
 CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



IT 1314-62-1, Vanadium oxide (V2O5), uses
 (in coating; manuf. of low wt. resistant porous glass fibers by
 leaching aluminoborosilicate glass fibers and their applications)
 RN 1314-62-1 HCA
 CN Vanadium oxide (V2O5) (8CI, 9CI) (CA INDEX NAME)
 *** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
 IC ICM C03C025-66
 ICS C03C025-10; C03C025-48
 CC 57-1 (Ceramics)
 Section cross-reference(s): 67
 IT Glass fiber fabrics
 (catalyst supports; manuf. of low wt. resistant porous
 glass fibers by leaching aluminoborosilicate glass fibers and
 their applications)
 IT Oxidation
 (catalytic, of carbon monoxide; manuf. of glass fiber
 catalysts and their applications)
 IT Oxidation
 (complete, of propane; manuf. of glass fiber catalysts
 and their applications)

- IT Alkylation
Photolysis
Sorbents
(manuf. of glass fiber **catalysts** and their applications)
- IT **Coating materials**
(metal oxides; manuf. of low wt. resistant porous glass fibers by leaching aluminoborosilicate glass fibers and their applications)
- IT Hydroxylation
(of phenol; manuf. of glass fiber **catalysts** and their applications)
- IT **Coating process**
(of porous glass fibers; manuf. of low wt. resistant porous glass fibers by leaching aluminoborosilicate glass fibers and their applications)
- IT **Catalysts**
(platinum and gold; manuf. of low wt. resistant porous glass fibers by leaching aluminoborosilicate glass fibers and their applications)
- IT **Catalyst supports**
(porous glass fibers; manuf. of low wt. resistant porous glass fibers by leaching aluminoborosilicate glass fibers and their applications)
- IT 78-10-4 **2031-67-6**, Methyltriethoxysilane 7664-93-9,
Sulfuric acid, processes 7784-27-2, Aluminum nitrate nonahydrate
7789-02-8 10031-43-3 13825-74-6 13986-27-1 14285-63-3
(coating precursor; manuf. of low wt. resistant porous glass fibers modified by metal oxides)
- IT **1308-38-9P**, Chromium oxide (Cr2O3), preparation
1317-38-0P, Copper oxide (CuO), preparation 1344-28-1P,
Aluminum oxide (Al2O3), preparation 7631-86-9P, Silica,
preparation **13463-67-7P**, Titania, preparation
(coating; manuf. of low wt. resistant porous glass fibers modified by metal oxides)
- IT 74-98-6, Propane, processes
(complete oxidn.; manuf. of glass fiber **catalysts** and their applications)
- IT 7440-06-4, Platinum, uses 7440-57-5, Gold, uses
(deposited on porous fiber, **catalyst**; manuf. of low wt. resistant porous glass fibers by leaching aluminoborosilicate glass fibers and their applications)
- IT 108-95-2, Phenol, processes
(hydroxylation; manuf. of glass fiber **catalysts** and their applications)
- IT **1314-62-1**, Vanadium oxide (V2O5), uses
(in coating; manuf. of low wt. resistant porous glass fibers by leaching aluminoborosilicate glass fibers and their applications)

157 ANSWER 4 OF 5 HCA COPYRIGHT 2004 ACS on STN

133:285681 Silane-based coating with a **deodorizing** effect for domestic appliances. Benthien, Thomas; Faber, Stefan; Jonschker, Gerhard; Sepeur, Stefan; Schmidt, Helmut; Stossel, Philipp; Jordens, Frank; Schmidmayer, Gerhard (Institut Fur Neue Materialien Gem. G.m.b.H., Germany; Bsh Bosch Und Siemens Hausgerate G.m.b.H.). PCT Int. Appl. WO 2000059555 A1 20001012, 29 pp. DESIGNATED STATES: W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (German). CODEN: PIXXD2. APPLICATION: WO 2000-EP3021 20000405. PRIORITY: DE 1999-19915378 19990406.

AB The invention relates to domestic appliances that are provided with a **catalytic** compn. comprising a coating consisting of a coating mass on a substrate. Said compn. is obtained by applying the coating mass, which comprises (a) a polycondensate consisting of at least one hydrolyzable organosilane and optionally, one or more compds. of glass-forming elements and (b) particles of one or more transition metal oxides, the wt. ratio of transition metal oxide particles to polycondensate being 10:1 to 1:10, to the substrate and heat-treating the applied coating mass. This **catalytic** compn. is a constituent part of the domestic appliance or a device connected to the domestic appliance.

IT 1307-96-6, Cobaltous oxide, uses 1308-06-1, Cobalt oxide (Co3O4) 1313-99-1, Nickel oxide (NiO), uses 1317-39-1, Cuprous oxide, uses 1344-43-0, Manganese oxide (MnO), uses 12014-74-3, Cerium oxide (CeO) (silane-based coating with a **deodorizing** effect for domestic appliances)

RN 1307-96-6 HCA

CN Cobalt oxide (CoO) (8CI, 9CI) (CA INDEX NAME)

Co=O

RN 1308-06-1 HCA

CN Cobalt oxide (Co3O4) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 1313-99-1 HCA

CN Nickel oxide (NiO) (8CI, 9CI) (CA INDEX NAME)

Ni=O

RN 1317-39-1 HCA
 CN Copper oxide (Cu₂O) (8CI, 9CI) (CA INDEX NAME)



RN 1344-43-0 HCA
 CN Manganese oxide (MnO) (8CI, 9CI) (CA INDEX NAME)



RN 12014-74-3 HCA
 CN Cerium oxide (CeO) (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT 78-62-6, Dimethyldiethoxysilane 780-69-8,
 Phenyltriethoxysilane 1067-25-0 2031-67-6,
 Methyltriethoxysilane
 (silane-based coating with a deodorizing effect for
 domestic appliances)

RN 78-62-6 HCA
 CN Silane, diethoxydimethyl- (8CI, 9CI) (CA INDEX NAME)



RN 780-69-8 HCA
 CN Silane, triethoxyphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 1067-25-0 HCA
 CN Silane, trimethoxypropyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 2031-67-6 HCA
 CN Silane, triethoxymethyl- (8CI, 9CI) (CA INDEX NAME)



IC ICM A61L009-014
 ICS C09D183-04; C08K003-22
 CC 59-4 (Air Pollution and Industrial Hygiene)
 Section cross-reference(s): 67
 ST silane based coating **catalytic oxidative deodorizing**
 IT **Catalyst** supports
 (ceramic honeycomb; silane-based coating with a **deodorizing** effect for domestic appliances)
 IT Appliances
 Ceramics
Coating materials
 Glass ceramics
 (silane-based coating with a **deodorizing** effect for domestic appliances)
 IT Glass, reactions
 Metals, reactions
 Oxides (inorganic), reactions
 Silanes
 Transition metals, reactions
 (silane-based coating with a **deodorizing** effect for domestic appliances)
 IT Organic compounds, processes
 (silane-based coating with a **deodorizing** effect for domestic appliances)
 IT 7631-86-9, Levasil 300/30, reactions
 (colloidal; silane-based coating with a **deodorizing** effect for domestic appliances)
 IT 1307-96-6, Cobaltous oxide, uses 1308-06-1, Cobalt oxide (Co3O4) 1313-99-1, Nickel oxide (NiO), uses

1317-39-1, Cuprous oxide, uses 1344-43-0,
Manganese oxide (MnO), uses 12014-74-3, Cerium oxide (CeO)
(silane-based coating with a **deodorizing** effect for
domestic appliances)

- IT 64-17-5, Ethanol, reactions 78-10-4, Tetraethoxysilane
78-62-6, Dimethyldiethoxysilane 780-69-8,
Phenyltriethoxysilane 1067-25-0 2031-67-6,
Methyltriethoxysilane 3251-23-8 7439-89-6, Iron, reactions
7439-91-0, Lanthanum, reactions 7439-96-5, Manganese, reactions
7439-98-7, Molybdenum, reactions 7440-02-0, Nickel, reactions
7440-22-4, Silver, reactions 7440-32-6, Titanium, reactions
7440-33-7, Tungsten, reactions 7440-44-0, Carbon, reactions
7440-45-1, Cerium, reactions 7440-47-3, Chromium, reactions
7440-48-4, Cobalt, reactions 7440-50-8, Copper, reactions
7440-62-2, Vanadium, reactions 7440-67-7, Zirconium, reactions
7647-01-0, Hydrogen chloride, reactions 10108-73-3, Cerium nitrate
10377-66-9, Manganese nitrate
(silane-based coating with a **deodorizing** effect for
domestic appliances)
- IT 12597-69-2, Steel, uses
(wire mesh; silane-based coating with a **deodorizing**
effect for domestic appliances)

L57 ANSWER 5 OF 5 HCA COPYRIGHT 2004 ACS on STN

133:285680 Silane-based coating mass with a **catalytic**,
oxidative and **deodorizing** effect. Benthien,
Thomas; Faber, Stefan; Jonschker, Gerhard; Sepeur, Stefan; Schmidt,
Helmuth; Stossel, Philipp (Institut fur Neue Materialien Gem.
G.m.b.H., Germany). PCT Int. Appl. WO 2000059554 A1 20001012, 33
pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG,
BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK,
LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO,
RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,
YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ,
CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU,
MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (German). CODEN: PIXXD2.
APPLICATION: WO 2000-EP3020 20000405. PRIORITY: DE 1999-19915377
19990406.

- AB The invention relates to a **catalytic** compn., comprising a
coating which consists of a coating mass on a support. The compn.
can be obtained by applying the coating mass, which comprises (1) a
polycondensate consisting of at least one hydrolyzable organosilane
and optionally, one or more compds. of glass-forming elements, and
(2) particles of one or more transition metal oxides, the wt. ratio
of transition metal oxide particles to polycondensate being 10:1 to
1:10, to the support and heat-treating the applied coating mass.
The invention also relates to a method for producing this

catalytic compn. and to its use for **deodorization** or for **oxidizing** org. components or carbon.

IT 1306-38-3, Cerium oxide (CeO₂), uses 1307-96-6, Cobaltous oxide, uses 1308-06-1, Cobalt oxide (Co₃O₄) 1313-13-9, Manganese oxide (MnO₂), uses 1313-99-1, Nickel oxide (NiO), uses 1317-39-1, Cuprous oxide, uses (silane-based coating mass with a **catalytic, oxidative and deodorizing effect**)

RN 1306-38-3 HCA
CN Cerium oxide (CeO₂) (8CI, 9CI) (CA INDEX NAME)

O=Ce=O

RN 1307-96-6 HCA
CN Cobalt oxide (CoO) (8CI, 9CI) (CA INDEX NAME)

Co=O

RN 1308-06-1 HCA
CN Cobalt oxide (Co₃O₄) (8CI, 9CI) (CA INDEX NAME)
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 1313-13-9 HCA
CN Manganese oxide (MnO₂) (8CI, 9CI) (CA INDEX NAME)

O=Mn=O

RN 1313-99-1 HCA
CN Nickel oxide (NiO) (8CI, 9CI) (CA INDEX NAME)

Ni=O

RN 1317-39-1 HCA
CN Copper oxide (Cu₂O) (8CI, 9CI) (CA INDEX NAME)

Cu-O-Cu

IT 78-62-6, Dimethyldiethoxysilane 780-69-8, Phenyltriethoxysilane 1067-25-0 2031-67-6, Methyltriethoxysilane (silane-based coating mass with a **catalytic, oxidative and deodorizing effect**)

RN 78-62-6 HCA
CN Silane, diethoxydimethyl- (8CI, 9CI) (CA INDEX NAME)



RN 780-69-8 HCA

CN Silane, triethoxyphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 1067-25-0 HCA

CN Silane, trimethoxypropyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 2031-67-6 HCA

CN Silane, triethoxymethyl- (8CI, 9CI) (CA INDEX NAME)



IC ICM A61L009-014

ICS C09D183-04; C08K003-22

CC 59-4 (Air Pollution and Industrial Hygiene)
Section cross-reference(s): 67ST silane based coating **catalytic oxidative
deodorizing**IT **Catalyst supports**(ceramic honeycomb; silane-based coating mass with a
catalytic, oxidative and deodorizing
effect)

- IT Ceramics
 - Coating materials
 - Glass ceramics
 - Oxidation catalysts
 - (silane-based coating mass with a catalytic, oxidative and deodorizing effect)
- IT Glass, uses
- Metals, uses
- Oxides (inorganic), uses
- Silanes
- Transition metals, uses
 - (silane-based coating mass with a catalytic, oxidative and deodorizing effect)
- IT Organic compounds, processes
 - (silane-based coating mass with a catalytic, oxidative and deodorizing effect)
- IT 7631-86-9, Levasil 300/30, reactions
 - (colloidal; silane-based coating mass with a catalytic, oxidative and deodorizing effect)
- IT 1306-38-3, Cerium oxide (CeO₂), uses 1307-96-6, Cobaltous oxide, uses 1308-06-1, Cobalt oxide (Co₃O₄) 1313-13-9, Manganese oxide (MnO₂), uses 1313-99-1, Nickel oxide (NiO), uses 1317-39-1, Cuprous oxide, uses 7439-89-6, Iron, uses 7439-91-0, Lanthanum, uses 7439-96-5, Manganese, uses 7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses 7440-22-4, Silver, uses 7440-32-6, Titanium, uses 7440-33-7, Tungsten, uses 7440-45-1, Cerium, uses 7440-47-3, Chromium, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7440-62-2, Vanadium, uses 7440-67-7, Zirconium, uses (silane-based coating mass with a catalytic, oxidative and deodorizing effect)
- IT 64-17-5, Ethanol, uses
 - (silane-based coating mass with a catalytic, oxidative and deodorizing effect)
- IT 78-10-4, Tetraethoxysilane 78-62-6, Dimethyldiethoxysilane 780-69-8, Phenyltriethoxysilane 1067-25-0 2031-67-6, Methyltriethoxysilane 3251-23-8, Copper nitrate (Cu(NO₃)₂) 7647-01-0, Hydrogen chloride, reactions 10108-73-3, Cerium nitrate (Ce(NO₃)₃) 10377-66-9, Manganese nitrate (Mn(NO₃)₂) (silane-based coating mass with a catalytic, oxidative and deodorizing effect)
- IT 7440-44-0, Carbon, processes
 - (silane-based coating mass with a catalytic, oxidative and deodorizing effect)
- IT 12597-69-2, Steel, uses
 - (wire mesh; silane-based coating mass with a catalytic, oxidative and deodorizing effect)

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L58 ANSWER 1 OF 24 HCA COPYRIGHT 2004 ACS on STN

140:294647 Mechanisms and Resolution of Photocatalytic Lithography.

Kubo, Wakana; Tatsuma, Tetsu; Fujishima, Akira; Kobayashi, Hironori (Institute of Industrial Science, University of Tokyo, Tokyo, 153-8505, Japan). Journal of Physical Chemistry B, 108(9), 3005-3009 (English) 2004. CODEN: JPCBKF. ISSN: 1520-6106. Publisher: American Chemical Society.

AB Remote **oxidn.** via the gas phase by the TiO₂ photocatalyst was exploited for a novel technique for solid surface patterning, photocatalytic lithog. A TiO₂-**coated** photomask was placed on an org. or inorg. substrate to be patterned with a small gap (12.5-100 μm), and irradiated with UV light. Heptadecafluorodecyltrimethoxysilane-, octadecyltriethoxysilane-, and methyltriethoxysilane-**coated** glass plates, a silicon plate, and a copper plate could be patterned in ≥10 min with resoln. of 10 μm or better. Such resoln. could be obtained even when the intervening gap between the TiO₂ **film** and the substrate was 100 μm. This may be explained in terms of a double excitation scheme, in which not only TiO₂ but also a chem. species diffusing from the TiO₂ surface or the substrate to be **oxidized** is excited by the incident light.

IT 13463-67-7, Titania, processes (solid surface patterning by photocatalytic lithog. using TiO₂-**coated** photomask)

RN 13463-67-7 HCA

CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME).



IT 2031-67-6, Methyltriethoxysilane 7399-00-0,

Octadecyltriethoxysilane

(solid surface patterning by photocatalytic lithog. using TiO₂-**coated** photomask)

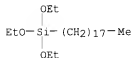
RN 2031-67-6 HCA

CN Silane, triethoxymethyl- (8CI, 9CI) (CA INDEX NAME)



RN 7399-00-0 HCA

CN Silane, triethoxyoctadecyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST titania photocatalyst remote oxidn photocatalytic lithog; surface photooxidn titania coated photomask photolithog patterning
- IT Photolithography
(photocatalytic; solid surface patterning by photocatalytic lithog. using TiO2-coated photomask)
- IT **Catalysis**
(photochem.; solid surface patterning by photocatalytic lithog. using TiO2-coated photomask)
- IT **Oxidation catalysts**
(photooxidn.; solid surface patterning by photocatalytic lithog. using TiO2-coated photomask)
- IT Photolysis
(possible mechanism involving photolysis of diffusing species in solid surface patterning by photocatalytic lithog. using TiO2-coated photomask)
- IT Diffusion
Oxidation, photochemical
Photomasks (lithographic masks)
(solid surface patterning by photocatalytic lithog. using TiO2-coated photomask)
- IT 7722-84-1, Hydrogen peroxide, miscellaneous
(possible mechanism involving photolysis of diffusing species in solid surface patterning by photocatalytic lithog. using TiO2-coated photomask)
- IT 7440-47-3, Chromium, processes 13463-67-7, Titania, processes
(solid surface patterning by photocatalytic lithog. using TiO2-coated photomask)
- IT 2031-67-6, Methyltriethoxysilane 7399-00-0, Octadecyltriethoxysilane 7440-21-3, Silicon, processes 7440-50-8, Copper, processes 83048-65-1
(solid surface patterning by photocatalytic lithog. using TiO2-coated photomask)

controlled by esterification rate of acetic acid and alcohols.
 Chiu, Lien-Hua; Chen, Wen-Tung; Guu, Jan-An; Wu, Jeffery Chi-Sheng;
 Tseng, I-Hsiang; Chen, Chih-Hsien (Taiwan). U.S. Pat. Appl. Publ.
 US 2004016368 A1 20040129, 7 pp. (English). CODEN: USXXCO.
 APPLICATION: US 2002-206180 20020729.

- AB Photocatalysts including titania and silica components are manufd.
 for antifouling, sterilization, **deodorization** properties
 and can be applied to manufg. raw material for textile fibers and
coating textile products. The titania component is
 synthesized by sol-gel hydrolysis of alkoxide precursor using
 slow-released water generated by the esterification of acetic acid
 and an alc. to conduct the hydrolysis condensation. The silica
 component is prepd. by sol-gel process by addn. of alkylaryl silane
oxidized compds. (such as TEOS or methyltriethoxysilane).
- IT **13463-67-7**, Titanium dioxide, uses
 (in photocatalyst; manuf. of TiO₂-SiO₂ photocatalysts by sol-gel
 hydrolysis controlled by esterification rate of acetic acid and
 alcs.)
- RN 13463-67-7 HCA
 CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)



- IT **2031-67-6**, Methyltriethoxysilane
 (precursors; manuf. of TiO₂-SiO₂ photocatalysts by sol-gel
 hydrolysis controlled by esterification rate of acetic acid and
 alcs.)
- RN 2031-67-6 HCA
 CN Silane, triethoxymethyl- (8CI, 9CI) (CA INDEX NAME)



- IC ICM C04B002-00
 ICS C04B014-04
 NCL 106436000; 106482000; 428404000
 CC 57-2 (Ceramics)
 Section cross-reference(s): 40
- IT **Catalysts**
 (photochem.; manuf. of TiO₂-SiO₂ photocatalysts by sol-gel
 hydrolysis controlled by esterification rate of acetic acid and
 alcs.)
- IT 7631-86-9, Silicon dioxide, uses **13463-67-7**, Titanium

dioxide, uses

(in photocatalyst; manuf. of TiO₂-SiO₂ photocatalysts by sol-gel hydrolysis controlled by esterification rate of acetic acid and alcs.)

IT 78-10-4, Tetraethoxysilane 2031-67-6,

Methyltriethoxysilane

(precursors; manuf. of TiO₂-SiO₂ photocatalysts by sol-gel hydrolysis controlled by esterification rate of acetic acid and alcs.)

L58 ANSWER 3 OF 24 HCA COPYRIGHT 2004 ACS on STN

140:101869 Surface diffusion behavior of photogenerated active species or holes on TiO₂ photocatalysts. Kawahara, Keisuke; Ohko, Yoshihisa; Tatsuma, Tetsu; Fujishima, Akira (Department of Applied Chemistry, Graduate School of Engineering, The University of Tokyo, 7-3-1, Hongo, Bunkyo-ku, Tokyo, 113-8656, Japan). Physical Chemistry Chemical Physics, 5(21), 4764-4766 (English) 2003. CODEN: PPCPPQ. ISSN: 1463-9076. Publisher: Royal Society of Chemistry.

AB A TiO₂ photocatalyst modified with octadecyltriethoxysilane (ODS) was irradiated with UV light through a photomask, and the two-dimensional decompn. behavior of ODS was monitored by means of Fourier transform IR (FTIR) microscopy. Decompn. of ODS in the dark region as well as that in the illuminated region was obsd., indicating that •OH radicals or holes diffused on the TiO₂ surface at least 75 µm. The decompn. in the dark region was accelerated after the ODS in the illuminated region was almost decompd. Stray light due to diffraction, reflection and scattering was not predominantly responsible for the decompn. in the dark region.

IT 13463-67-7, Titania, processes

(anatase-type; diffusion behavior of photogenerated active oxygen species and holes on surface of TiO₂ photocatalysts)

RN 13463-67-7 HCA

CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)

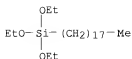
O=Ti=O

IT 7399-00-0, Octadecyltriethoxysilane

(diffusion behavior of photogenerated active oxygen species and holes on surface of TiO₂ photocatalyst modified with octadecyltriethoxysilane)

RN 7399-00-0 HCA

CN Silane, triethoxyoctadecyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



- CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 59, 60, 67
- IT IR reflectance spectra
(diffusion behavior of photogenerated active oxygen species and holes on surface of TiO₂ photocatalyst film modified with octadecyltriethoxysilane)
- IT Photolysis
Photolysis catalysts
(diffusion behavior of photogenerated active oxygen species and holes on surface of TiO₂ photocatalyst modified with octadecyltriethoxysilane)
- IT Catalysts
Catalysts
(photochem.; diffusion behavior of photogenerated active oxygen species and holes on surface of TiO₂ photocatalysts)
- IT Oxidation catalysts
(photooxidn.; diffusion behavior of photogenerated active oxygen species and holes on surface of TiO₂ photocatalyst film modified with octadecyltriethoxysilane)
- IT 13463-67-7, Titania, processes
(anatase-type; diffusion behavior of photogenerated active oxygen species and holes on surface of TiO₂ photocatalysts)
- IT 3352-57-6, Hydroxyl, reactions 7399-00-0,
Octadecyltriethoxysilane
(diffusion behavior of photogenerated active oxygen species and holes on surface of TiO₂ photocatalyst modified with octadecyltriethoxysilane)
- IT 7440-21-3, Silicon, uses 7631-86-9, Silica, uses
(substrate; diffusion behavior of photogenerated active oxygen species and holes on surface of TiO₂ photocatalyst film modified with octadecyltriethoxysilane)

L58 ANSWER 4 OF 24 HCA COPYRIGHT 2004 ACS on STN

138:390559 Water-repellent cosmetics with good emulsion stability containing triglycerin-modified silicones and salts. Nakanishi, Tetsuo; Tachibana, Kiyomi (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003146832 A2 20030521, 26 pp. (Japanese). CODEN: JKKXAF. APPLICATION: JP 2001-349695 20011115.

AB The cosmetics contain (A) triglycerin-modified silicones

R1aR2bSiO(4-a-b)/2 [R1 = C1-30 alkyl, aryl, aralkyl, amino-substituted alkyl, carboxyl-substituted alkyl, CdH2dO(C2H4O)e(C3H6O)fR3; R2 = QOCH[CH2OCH2CH(OH)CH2OH]2; Q = C3-20 hydrocarbylene which may contain ether linkage and ester linkage; R3 = C4-30 hydrocarbyl, R4CO; R4 = C1-30 hydrocarbyl; a = 1.0-2.5; b = 0.001-1.5; d = 0-15; e, f = 0-50] as emulsifiers and (B) salts. A skin cleanser contg. polyoxyethylene sorbitan monolaurate 30, NaCl 1, H2O 49, and an organopolysiloxane having av. compositional formula (Me3SiO1/2)2(Me2SiO)10(MeRSiO)5 [R = C3H6OCH[CH2OCH2CH(OH)CH2OH]2] (prepd. from methylhydrogenpolysiloxane and an allyl ether) 20 wt.% showed transparent appearance, good cleansing effect, and skin-moisturizing effect.

IT 1309-37-1, Red iron oxide, biological studies
 1314-13-2, Zinc oxide, biological studies 13463-67-7
 , Titania, biological studies 56275-01-5, Silicic acid
 trimethylsilyl ester
 (water-repellent cosmetics with good emulsion stability contg.
 triglycerin-modified silicone emulsifiers and salts)

RN 1309-37-1 HCA
 CN Iron oxide (Fe2O3) (8CI, 9CI) (CA INDEX NAME)
 *** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
 RN 1314-13-2 HCA
 CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)

O=Zn

RN 13463-67-7 HCA
 CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

RN 56275-01-5 HCA
 CN Silicic acid, trimethylsilyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 1343-98-2
 CMF Unspecified
 CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 1066-40-6
 CMF C3 H10 O Si



- IC ICM A61K007-00
ICS A61K007-02; A61K007-027; A61K007-031; A61K007-032; A61K007-06;
A61K007-075; A61K007-32; A61K007-42; A61K007-48; A61K007-50
- CC 62-4 (Essential Oils and Cosmetics)
Section cross-reference(s): 37
- IT Antiperspirants
Deodorants (personal)
Emulsifying agents
Human
Sunscreens
Suntanning agents
Surfactants
(water-repellent cosmetics with good emulsion stability contg. triglycerin-modified silicone emulsifiers and salts)
- IT 50-70-4, Sorbitol, biological studies 56-81-5, Glycerin, biological studies 57-10-3, Palmitic acid, biological studies 57-55-6, Propylene glycol, biological studies 64-17-5, Ethanol, biological studies 68-04-2, Sodium citrate 72-17-3, Sodium lactate 102-71-6D, Triethanolamine, salts 106-14-9, 12-Hydroxystearic acid 107-64-2, Dioctadecyldimethylammonium chloride 107-88-0, 1,3-Butylene glycol 110-27-0, Isopropyl myristate 111-01-3, Squalane 111-02-4, Squalene 112-92-5, Stearyl alcohol 115-69-5, 2-Amino-2-methyl-1,3-propanediol 142-47-2, Sodium glutamate 541-02-6, Decamethylcyclopentasiloxane 556-67-2, Octamethylcyclotetrasiloxane 557-05-1, Zinc stearate 822-16-2, Sodium stearate 1309-37-1, Red iron oxide, biological studies 1314-13-2, Zinc oxide, biological studies 1318-93-0D, Montmorillonite, dioctadecyldimethylammonium derivs. 1327-43-1, Aluminum magnesium silicate 1338-43-8, Sorbitan monooleate 1643-20-5, Unisafe A-LM 4418-26-2, Sodium dehydroacetate 7047-84-9, Aluminum monostearate 7299-99-2, Pentaerythritol tetra-2-ethylhexanoate 7360-38-5, Glyceryl tri-2-ethylhexanoate 7446-70-0, Aluminum chloride, biological studies 7487-88-9, Magnesium sulfate, biological studies 7647-14-5, Sodium chloride, biological studies 7757-82-6, Sodium sulfate, biological studies 8007-43-0, Sorbitan sesquioleate 9000-07-1, Carrageenan 9002-92-0, Pegnol L 6 9004-53-9D, Dextrin, fatty acid esters 9004-98-2, Emalex 510 9005-64-5, Polyoxyethylene sorbitan monolaurate 9005-65-6, Polyoxyethylene sorbitan monooleate 9016-00-6, Dimethylsilanediol homopolymer, sru

9067-32-7, Sodium hyaluronate 9082-07-9, Sodium chondroitin sulfate 12173-47-6D, Hectorite, dimethyldistearylammmonium derivs. **13463-67-7**, Titania, biological studies 14357-21-2D, Dimethyldistearylammmonium, hectorite derivs. 14357-21-2D, Dioctadecyldimethylammmonium, montmorillonite derivs. 25168-73-4, Sucrose monostearate 25265-71-8, Dipropylene glycol 25322-68-3, Polyethylene glycol 25322-68-3D, Polyethylene glycol, hydrogenated castor oil derivs. 25637-84-7, Glyceryl dioleate 26942-95-0, Glyceryl triisostearate 27215-38-9, Glycerol monolaurate 31566-31-1, Glyceryl monostearate 36653-82-4, Cetanol 51274-00-1, Yellow iron oxide 52489-08-4, Sodium sorbitol sulfate **56275-01-5**, Silicic acid trimethylsilyl ester 60842-32-2, Aerosil R 972 68795-69-7, Propylene glycol monodecanoate 69364-63-2, Polyoxyethylene isocetyl ether 72585-97-8, Cetyl isooctanoate 83708-67-2, Glyceryl triisooctanoate 108910-78-7, Ascorbic acid phosphate magnesium salt 134910-86-4, Aluminum zirconium tetrachlorohydrate glycine complex 183387-52-2, Rheoparl TT 314020-17-2, KSG 15 314726-51-7, KSP 100 389609-18-1, SPD-T 1S 389614-24-8, SPD-Z 1S (water-repellent cosmetics with good emulsion stability contg. triglycerin-modified silicone emulsifiers and salts)

L58 ANSWER 5 OF 24 HCA COPYRIGHT 2004 ACS on STN

138:63751 Patterning of solid surfaces by photocatalytic lithography based on the remote **oxidation** effect of TiO2. Tatsuma, Tetsu; Kubo, Wakana; Fujishima, Akira (Institute of Industrial Science, University of Tokyo, Meguro, Tokyo, 153-8505, Japan). Langmuir, 18(25), 9632-9634 (English) 2002. CODEN: LANGD5. ISSN: 0743-7463. Publisher: American Chemical Society.

AB A novel technique for solid surface patterning is developed on the basis of the remote **oxidn.** effect of TiO2 photocatalysts. A TiO2-coated quartz plate was faced to a solid substrate, i.e., a glass plate modified with an ultrathin org. **layer** or silicon, copper, or silver plate, sepd. by a small gap, and the TiO2 was irradiated with UV light in air through a photomask. As a result, two-dimensional images corresponding to the photomask are obtained. Those images are based on the contrasts of nonoxidized to **oxidized** surfaces.

IT **13463-67-7**, Titanium dioxide, processes (STS-21; lithog. patterning based on remote photooxidn. effect of TiO2)

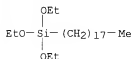
RN 13463-67-7 HCA

CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

IT 7399-00-0, Octadecyltriethoxysilane

(lithog. patterning based on remote photooxidn. effect of TiO₂)
 RN 7399-00-0 HCA
 CN Silane, triethoxyoctadecyl- {6CI, 7CI, 8CI, 9CI} (CA INDEX NAME)



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 ST photocatalytic lithog remote oxidn effect titania photocatalyst; photooxidn titania photocatalyst photocatalytic lithog
 IT **Oxidation**, photochemical
 (lithog. patterning based on remote photooxidn. effect of TiO₂)
 IT **Oxidation catalysts**
 (photooxidn.; lithog. patterning based on remote photooxidn. effect of TiO₂)
 IT **13463-67-7**, Titanium dioxide, processes
 (STS-21; lithog. patterning based on remote photooxidn. effect of TiO₂)
 IT 7440-21-3D, Silicon, **oxidized** 7440-22-4D, Silver, **oxidized** 7440-50-8D, Copper, **oxidized**
 (lithog. patterning based on remote photooxidn. effect of TiO₂)
 IT **7399-00-0**, Octadecyltriethoxysilane 7440-21-3, Silicon, reactions 7440-22-4, Silver, reactions 7440-50-8, Copper, reactions
 (lithog. patterning based on remote photooxidn. effect of TiO₂)

L58 ANSWER 6 OF 24 HCA COPYRIGHT 2004 ACS on STN

136:406603 A transfer resistant anhydrous cosmetic composition.
 Morrison, Sam B. (L'Oreal S.A., Fr.). PCT Int. Appl. WO 2002041854
 A2 20020530, 19 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2001-US43212 20011120. PRIORITY: US 2000-717204 20001122.

AB The invention also provides for a cosmetic powder delivery system and a method of delivering a powder compn. to a keratinous substance. A compn. with transfer resistance and/or waterproof

properties comprising at least one linear dimethicone, and at least one block copolymer film former chosen from triblock copolymer film formers, multi-block copolymer film formers and radial block copolymer film formers. Thus, cream-based makeup compn. contained jojoba esters 8, polyethylene 2, Dow Corning-200 44.5, TiO₂ 9.2, PTFE 3.5, mica 1.9, lauroyllysine 0.1, aluminum starch octenyl succinate 2.0, isopropyltitanium triisostearate 0.2, iron oxides 2.5, methylparaben 0.1, cyclomethicone 9.6, trimethylsiloxysilicate 8.4, dimethiconol 0.5, Versagel M5960 2.0, preservatives 0.3, lauryl PCA 0.1, acrylate copolymer 0.9, and isobutane 0.1%.

IT 13463-67-7, Titanium oxide, biological studies
56275-01-5, Silicic acid trimethylsilyl ester
(transfer resistant anhyd. cosmetic compn.)
RN 13463-67-7 HCA
CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

RN 56275-01-5 HCA
CN Silicic acid, trimethylsilyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 1343-98-2
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 1066-40-6
CMF C3 H10 O Si



IC ICM A61K007-00
CC 62-4 (Essential Oils and Cosmetics)
Section cross-reference(s): 37
IT **Deodorants** (personal)
(sticks; transfer resistant anhyd. cosmetic compn.)
IT Cosmetics
Insect repellents

Odor and Odorous substances
 Perfumes
 Pigments, nonbiological
 Silk
 Screens

(transfer resistant anhyd. cosmetic compn.)

- IT 74-85-1D, Ethylene, polymers with acrylates 79-10-7D, Acrylic acid, esters, polymers 2143-69-3D, Vinylidene, polymers 7631-86-9, Silica, biological studies 9002-84-0, PTFE 9002-88-4, Polyethylene 9005-25-8, Starch, biological studies 9006-65-9, Dimethicone 9011-14-7, PMMA 9016-00-6, Polydimethylsiloxane 9016-00-6D, Polydimethylsiloxane, trimethylsilyl-terminated 9087-61-0, Aluminum starch octenyl succinate 13463-67-7, Titanium oxide, biological studies 14807-96-6, Talc, biological studies 31692-79-2, Dimethiconol 31900-57-9, Polydimethylsiloxane 31900-57-9D, Polydimethylsiloxane, trimethylsilyl-terminated 42557-10-8, Dow Corning 200 56275-01-5, Silicic acid trimethylsilyl ester 104133-11-1, Methylsilanetriol homopolymer 153315-80-1, Methylsilanetriol homopolymer, ladder SRU
 (transfer resistant anhyd. cosmetic compn.)

L58 ANSWER 7 OF 24 HCA COPYRIGHT 2004 ACS on STN

136:24951 Sterol-modified silicone compound and cosmetic preparation. Sakata, Koji (Shin-Etsu Chemical Co., Ltd., Japan). PCT Int. Appl. WO 2001092376 A1 20011206, 65 pp. DESIGNATED STATES: W: KR, US; RW: DE, FR, GB. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2001-JP4422 20010525. PRIORITY: JP 2000-164337 20000601.

AB A sterol-modified silicone compd. which has a m.p. of $\leq 40^\circ$, is hydrophilic, has excellent emulsifiability, and is represented by the general formula $R_1aR_2bSiO(4-a-b)/2$, wherein R_1 s are the same or different and each is C1-10 monovalent alkyl, aryl, aralkyl, or fluoroalkyl contg. no aliph. unsatd. bonds; $a = 1-2.5$; $b = 0.001-1$; $a + b = 1.5-2.6$; R_2 is an org. group represented by the general formula $-(CpH_2p)O(CqH_2qO)r-X$ (wherein X is the monovalent residue formed by removing the hydroxyl group from a sterol); $p = 2-6$; $q = 2-4$; and $r = 3-200$. A cosmetic compn. excellent in stability and heat-reserving property which contains the silicone compd. is also disclosed. A silicone compd. $AO(C_3H_6O)_3(C_2H_4O)_7C_3H_6(Me)(Me)SiO[(Me)(Me)SiO]_6O$ $(Me)(Me)SiC_3H_6O(C_2H_4O)_7(C_3H_6O)_3A$ (A = cholesterol residue) was prep'd., and combined at 2 % with 1,3-butylene glycol 8, lecithin 0.1, and water q.s. to 100 % to obtain a cosmetic lotion.

IT 1309-37-1, Red iron oxide, biological studies 13463-67-7, Titanium oxide, biological studies 56275-01-5

(cosmetic compns. contg. sterol-modified silicone compds. and other ingredients)

RN 1309-37-1 HCA
 CN Iron oxide (Fe2O3) (8CI, 9CI) (CA INDEX NAME)
 *** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
 RN 13463-67-7 HCA
 CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



RN 56275-01-5 HCA
 CN Silicic acid, trimethylsilyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 1343-98-2
 CMF Unspecified
 CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 1066-40-6
 CMF C3 H10 O Si



IC ICM C08G077-46
 ICS C08G077-14; C08L083-12; A61K007-00; A61K007-02; A61K007-06;
 A61K007-32; A61K007-40; A61K007-48
 CC 62-4 (Essential Oils and Cosmetics)
 Section cross-reference(s): 37
 IT Antiperspirants
 Deodorants
 Pigments, nonbiological
 Sunscreens
 Surfactants
 (cosmetic compns. contg. sterol-modified silicone compds. and
 other ingredients)
 IT 56-81-5, Glycerin, biological studies 57-10-3, Palmitic acid,
 biological studies 57-55-6, Propylene glycol, biological studies
 107-88-0, 1,3-Butylene glycol 110-27-0, Isopropyl myristate
 111-02-4, Squalene 538-23-8, Glyceryl trioctanoate 593-31-7,
 α -Monooleyl glyceryl ether 1309-37-1, Red iron

oxide, biological studies 1319-45-5, Gunjo 5281-04-9, Japan red 202 5466-77-3, Octyl-p-methoxycinnamate 8007-43-0, Sorbitan sesquioleate 9002-88-4 9002-92-0, Polyethylene glycol lauryl ether 9005-12-3, Methyl phenyl polysiloxane 9005-65-6, Polyoxyethylene sorbitan monooleate 9005-67-8, Polyoxyethylene sorbitan monostearate 9016-00-6, Dimethylpolysiloxane 11118-57-3, Chromium oxide 12174-53-7, Sericite 12227-89-3, Black iron oxide **13463-67-7**, Titanium oxide, biological studies 14807-96-6, Talc, biological studies 25265-71-8, Dipropylene glycol 25322-68-3, Polyethylene glycol 25637-84-7, Glycerol dioleate 31335-74-7, Neopentyl glycol dioctanoate 32128-65-7, Polyoxyethylene octyl dodecyl ether 42131-27-1, Isotridecylisononanoate 51274-00-1, Yellow iron oxide 54392-26-6, Sorbitan monoisostearate **56275-01-5** 60842-32-2, Aerosil R972 61332-02-3, Glycerol isostearate 63793-60-2, Polypropylene glycol myristyl ether 70356-09-1, 4-tert-Butyl-4'-methoxy-dibenzoylmethane 74784-46-6 78145-84-3, α -Monoisostearyl glyceryl ether 81752-33-2, Diglycerol monoisostearate 83138-62-9, Polyglyceryl isostearate 83708-67-2, Glycerol triisooctanoate 112627-55-1, Aerosil RY200 126449-40-9 148093-12-3, Sepigel 305 187887-27-0, Polyglyceryl triisostearate 319427-75-3, KF-6026

(cosmetic compns. contg. sterol-modified silicone compds. and other ingredients)

L58 ANSWER 8 OF 24 HCA COPYRIGHT 2004 ACS on STN

135:376535 Composition for make-up or skin-care in a powdery form containing a particular binder. Hadasch, Anke; Lemann, Patricia; Simonnet, Jean-tierry (L'oreal, Fr.). Eur. Pat. Appl. EP 1155676 A2 20011121, 21 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (French). CODEN: EPXXDW. APPLICATION: EP 2001-401249 20010515. PRIORITY: FR 2000-6448 20000519.

AB A make-up compn. contains a powdery phase and a binding phase which a continuous aq. phase. A binding phase contained iso-Pr myristate 1.64, castor oil 2.46, vaseline oil 12.36, liq. lanolin 1.26, water 70.95, imidazolinyln urea 0.3, glycerin 5, Acylglutamate HS-11 0.03, phytantriol 2.97, vaseline 2.28, chlorphenesine 0.25, and polyoxyethylene sorbitan monopalmitate 0.5%. A cosmetic make-up contained talc 77.06, iron oxide 2.74, Nylon powder 10, titanium oxide 1, preservative 0.2, and above binding phase 9%.

IT **1314-13-2**, Zinc oxide, biological studies **1314-23-4**, Zirconium oxide, biological studies **13463-67-7**, Titanium oxide, biological studies **56275-01-5**

(compn. for make-up or skin-care in powdery form contg. particular binder)

RN 1314-13-2 HCA

CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)

$$\text{O}=\text{Zn}$$

RN 1314-23-4 HCA
 CN Zirconium oxide (ZrO₂) (8CI, 9CI) (CA INDEX NAME)

$$\text{O}=\text{Zr}=\text{O}$$

RN 13463-67-7 HCA
 CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)

$$\text{O}=\text{Ti}=\text{O}$$

RN 56275-01-5 HCA
 CN Silicic acid, trimethylsilyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 1343-98-2
 CMF Unspecified
 CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 1066-40-6
 CMF C3 H10 O Si



IC ICM A61K007-035
 CC 62-4 (Essential Oils and Cosmetics)
 IT Aloe barbadensis
 Alopecia
 Anthraquinone dyes
 Anti-inflammatory agents
 Antibacterial agents
 Azo dyes
 Caramel (color)
 Ceramics

Deodorants

Dyes

Fungicides

Gelation agents

Humectants

Insecticides

Microcapsules

Microspheres

Pearl

Pigments, nonbiological

Reducing agents

Sequestering agents

Stabilizing agents

Sunscreens

Suntanning agents

Surfactants

(compn. for make-up or skin-care in powdery form contg.
particular binder)

- IT 50-70-4, Sorbitol, biological studies 50-81-7, Vitamin c,
biological studies 52-90-4, Cysteine, biological studies
55-56-1, Chlorhexidine 57-10-3, Palmitic acid, biological studies
57-11-4, Stearic acid, biological studies 57-88-5, Cholesterol,
biological studies 58-08-2, Caffeine, biological studies 58-55-9,
Theophylline, biological studies 60-18-4D, Tyrosine, derivs.
60-23-1, Cysteamine 60-33-3, Linoleic acid, biological studies
68-11-1, Thioglycolic acid, biological studies 68-26-8, Retinol
69-72-7, Salicylic acid, biological studies 69-72-7D, Salicylic
acid, derivs. 70-30-4, Hexachlorophene 79-14-1, Glycolic acid,
biological studies 79-81-2, Retinol palmitate 81-13-0, Panthenol
91-53-2, Ethoxyquine 93-60-7, Methyl nicotinate 96-26-4,
Dihydroxyacetone 107-46-0, Hexamethyldisiloxane 110-27-0,
Isopropyl myristate 111-01-3, Squalane 112-80-1, Oleic acid,
biological studies 112-85-6, Behenic acid 112-92-5, Stearyl
alcohol 118-00-3, Guanosine, biological studies 120-72-9D,
Indole, derivs. 123-95-5, Butylstearate 124-07-2D, Caprylic
acid, glycerides 125-33-7, Hexamidine 127-47-9, Retinol acetate
137-66-6, Ascorbyl palmitate 141-94-6, Hexetidine 142-47-2D,
Monosodium glutamate, acyl derivs. 142-91-6, Isopropyl palmitate
143-28-2, Oleyl alcohol 302-79-4, Retinoic acid 302-79-4D,
Retinoic acid, derivs. 334-48-5D, Capric acid, glycerides
463-40-1, Linolenic acid 464-92-6, Asiatic acid 471-34-1,
Calcium carbonate, biological studies 497-76-7, Arbutin
501-30-4, Kojic acid 515-69-5, α -Bisabolol 540-97-6
541-02-6 544-63-8, Myristic acid, biological studies 546-93-0,
Magnesium carbonate 556-67-2 616-91-1, N-Acetyl cysteine
1190-73-4, N-Acetyl cysteamine 1256-86-6, Cholesteryl sulfate
1306-06-5, Hydroxyapatite 1314-13-2, Zinc oxide,
biological studies 1314-23-4, Zirconium oxide, biological

studies 1332-37-2, Iron oxide, biological studies 1406-18-4,
 Vitamin e 2197-63-9, Dicitylphosphate 2915-57-3 3380-34-5,
 Triclosan 4358-16-1, Cholesteryl phosphate 6640-03-5,
 Dimyristylphosphate 7069-42-3, Retinol propionate 7235-40-7,
 β -Carotene 7440-39-3D, Barium, salts, biological studies
 7440-67-7D, Zirconium, salts, biological studies 7440-70-2D,
 Calcium, salts, biological studies 7631-86-9, Silica, biological
 studies 7787-59-9, Bismuth oxychloride 9001-92-7, Protease
 9002-84-0, Polytetrafluoroethylene 9002-88-4, Polyethylene
 9003-27-4, Polyisobutene 9003-53-6, Polystyrene 9004-61-9,
 Hyaluronic acid 9005-25-8, Starch, biological studies 9011-14-7,
 Polymethylmethacrylate 9016-00-6, Polydimethylsiloxane
 9067-32-7, Sodium hyaluronate 10043-11-5, Boron nitride,
 biological studies 11042-64-1, γ -Orizanol 11103-57-4,
 Vitamin a 11118-57-3, Chromium oxide 11129-18-3, Cerium oxide
 12240-15-2, Ferric Blue **13463-67-7**, Titanium oxide,
 biological studies 14807-96-6, Talc, biological studies
 16690-92-9D, Disodium glutamate, acyl derivs. 17181-54-3,
 β -Glycerophosphate 19660-77-6, Chlorophyllin 20545-92-0,
 Pur-cellin 22766-83-2, 2-Octyldodecyl myristate 23597-82-2,
 Hexyl nicotinate 24937-14-2, Poly(β -alanine) 25513-34-2,
 Poly(β -alanine) 26545-51-7, Diethyl toluamide 26942-95-0,
 Glycerin triisostearate 29468-20-0, Pyridinethione 29806-73-3,
 2-Ethyl-hexyl palmitate 30399-84-9, Isostearic acid 31807-55-3,
 Isododecane 31900-57-9, Polydimethylsiloxane 34316-64-8, Hexyl
 laurate 34362-27-1, 2-Hexyl decyl laurate 34513-50-3,
 Octyldodecanol 36653-82-4, Cetanol 37309-58-3, Polydecene
 38304-91-5, Minoxidil 38517-23-6, Acylglutamate HS-11
 42131-25-9, Isononyl isononanoate. **56275-01-5** 57568-20-4,
 2-Octyldodecyl lactate 57654-76-9 60554-19-0 60908-77-2,
 Isohexadecane 68890-66-4, Octopirox 70424-62-3 70942-90-4,
 Glyceol 74563-64-7, Phytantriol 78418-03-8, n-Dodecanoyl
 5-salicylic acid 80208-78-2, Glycerol thioglycolate 81230-05-9,
 Diisostearyl malate 108910-78-7, Magnesium ascorbyl phosphate
 120486-24-0, Diglycerin triisostearate 127278-53-9 134112-33-7,
 2-Octyl decyl palmitate 145278-13-3 156218-15-4 197912-25-7
 200260-57-7 374538-88-2D, derivs. 374690-63-8
 (compn. for make-up or skin-care in powdery form contg.
 particular binder)

L58 ANSWER 9 OF 24 HCA COPYRIGHT 2004 ACS on STN

134:375216 Black filler for magnetic recording medium and magnetic
 recording medium using the same. Hayashi, Kazuyuki; Morii, Hiroko;
 Kamigaki, Mamoru; Ishitani, Seiji (Toda Kogyo Corporation, Japan).
 Eur. Pat. Appl. EP 1102245 A1 20010523, 126 pp. DESIGNATED STATES:
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP
 2000-310100 20001114. PRIORITY: JP 1999-324149 19991115; JP

1999-326190 19991116.

AB A magnetic recording medium comprises a nonmagnetic base film and a magnetic recording layer. The magnetic recording layer comprises a binder resin, magnetic particles and a black filler having an av. diam. of 0.08 to 1.0 μm . The magnetic recording layer comprises hematite particles as core particles, a coating formed on the surface of said hematite particles. The surface coating comprises at least one organosilicon compd. selected from organosilane compds. obtainable from alkoxysilane compds. and polysiloxanes or modified polysiloxanes. A carbon black coat which is provided on said coating layer in an amt. of from more than 30 to 60 parts by wt. based on 100 parts by wt. of said hematite particles.

IT 1317-60-8, Hematite, processes
(black filler for magnetic recording medium and magnetic recording medium fabrication)

RN 1317-60-8 HCA

CN Hematite (Fe₂O₃) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3	17778-80-2
Fe	2	7439-89-6

IT 12134-66-6, Maghemite
(magnetic core particles; black filler for magnetic recording medium and magnetic recording medium fabrication)

RN 12134-66-6 HCA

CN Maghemite (Fe₂O₃) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3	17778-80-2
Fe	2	7439-89-6

IT 1309-38-2, Magnetite, processes
(non-magnetic base film; black filler for magnetic recording medium and magnetic recording medium fabrication)

RN 1309-38-2 HCA

CN Magnetite (Fe₃O₄) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	4	17778-80-2
Fe	3	7439-89-6

IT 1314-13-2, Zinc oxide, processes 1314-35-8,
 Tungsten oxide, processes 13463-67-7, Titanium oxide,
 processes
 (non-magnetic undercoat layers; black filler for magnetic
 recording medium and magnetic recording medium fabrication)
 RN 1314-13-2 HCA
 CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)



RN 1314-35-8 HCA
 CN Tungsten oxide (WO3) (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 13463-67-7 HCA
 CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



IT 78-62-6, Dimethyldiethoxysilane 780-69-8
 1112-39-6, Dimethyldimethoxysilane 1185-55-3,
 Methyltrimethoxysilane 2031-67-6, Methyltriethoxysilane
 2553-19-7, Diphenyldiethoxysilane 2996-92-1,
 Phenyltrimethoxysilane 5575-48-4, Decyltrimethoxysilane
 6843-66-9, Diphenyldimethoxysilane 18395-30-7,
 Isobutyltrimethoxysilane
 (surface coating; black filler for magnetic recording medium and
 magnetic recording medium fabrication)
 RN 78-62-6 HCA
 CN Silane, diethoxydimethyl- (8CI, 9CI) (CA INDEX NAME)



RN 780-69-8 HCA
 CN Silane, triethoxyphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 1112-39-6 HCA
CN Silane, dimethoxydimethyl- (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 1185-55-3 HCA
CN Silane, trimethoxymethyl- (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 2031-67-6 HCA
CN Silane, triethoxymethyl- (8CI, 9CI) (CA INDEX NAME)



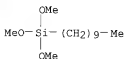
RN 2553-19-7 HCA
CN Silane, diethoxydiphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 2996-92-1 HCA
 CN Silane, trimethoxyphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 5575-48-4 HCA
 CN Silane, decyltrimethoxy- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 6843-66-9 HCA
 CN Silane, dimethoxydiphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 18395-30-7 HCA
 CN Silane, trimethoxy(2-methylpropyl)- (9CI) (CA INDEX NAME)



IC ICM G11B005-708
 ICS C09C003-12; C09C001-24
 CC 77-8 (Magnetic Phenomena)
 Section cross-reference(s): 38, 42, 46, 78
 IT Antistatic agents
 Coating process
 Fillers
 Lubricants

Magnetic memory devices

Magnetic particles

(black filler for magnetic recording medium and magnetic recording medium fabrication)

- IT Carbon black, processes
(oxidized, MA11; black filler for magnetic recording medium and magnetic recording medium fabrication)
- IT 1317-60-8, Hematite, processes 1344-28-1, α -Alumina, processes 12173-91-0, Magnetoplumbite 129406-57-1, Geon MR 110
(black filler for magnetic recording medium and magnetic recording medium fabrication)
- IT 12134-66-6, Maghemite
(magnetic core particles; black filler for magnetic recording medium and magnetic recording medium fabrication)
- IT 1309-38-2, Magnetite, processes 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9020-73-9, Polyethylene naphthalate 12597-68-1, Stainless steel, processes 25038-59-9, Polyethylene terephthalate, processes
(non-magnetic base film; black filler for magnetic recording medium and magnetic recording medium fabrication)
- IT 409-21-2, Silicon carbide (SiC), processes 471-34-1, Calcium carbonate, processes 513-77-9, Barium carbonate 546-93-0, Magnesium carbonate 1314-13-2, Zinc oxide, processes 1314-35-8, Tungsten oxide, processes 1317-33-5, Molybdenum disulfide, processes 1332-29-2, Tin oxide 1633-05-2, Strontium carbonate 7631-86-9, Silicon dioxide, processes 7727-43-7, Barium sulfate 7778-18-9, Calcium sulfate 10043-11-5, Boron nitride, processes 11115-92-7, Iron oxide hydroxide 11118-57-3, Chromium oxide 11129-18-3, Cerium oxide 12033-89-5, Silicon nitride, processes 12047-27-7, Barium titanate, processes 12070-08-5, Titanium carbide 13463-67-7, Titanium oxide, processes
(non-magnetic undercoat layers; black filler for magnetic recording medium and magnetic recording medium fabrication)
- IT 78-62-6, Dimethyldiethoxysilane 780-69-8
1112-39-6, Dimethyldimethoxysilane 1185-55-3, Methyltrimethoxysilane 2031-67-6, Methyltriethoxysilane 2553-19-7, Diphenyldiethoxysilane 2996-92-1, Phenyltrimethoxysilane 5575-48-4, Decyltrimethoxysilane 6843-66-9, Diphenyldimethoxysilane 9016-00-6, Dimethylpolysiloxane 18395-30-7, Isobutyltrimethoxysilane
(surface coating; black filler for magnetic recording medium and magnetic recording medium fabrication)

L58 ANSWER 10 OF 24 HCA COPYRIGHT 2004 ACS on STN

134:212507 Cosmetics containing branched volatile organopolysiloxanes. Kuroda, Akihiro; Sakuta, Koji; Usui, Hitoshi (Kanebo, Ltd., Japan; Shin-Etsu Chemical Co., Ltd.). PCT Int. Appl. WO 2001015658 A1

20010308, 82 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG.

(Japanese). CODEN: PIXXD2. APPLICATION: WO 2000-JP5838 20000829. PRIORITY: JP 1999-242948 19990830; JP 1999-242949 19990830; JP 1999-266824 19990921.

- AB Cosmetics characterized by contg. an organopolysiloxane (Me3SiO)3SiMe (I). The cosmetics exhibit excellent volatility and feels and are excellent in stability. A compd. I was prepd. by hydrolysis of a mixt. of trimethylchlorosilane and Me trichlorosilane, and combined at 25 % with silicone-treated TiO2 particles 3, polyoxyethylene-methylpolysiloxane copolymer (KF6017) 1, silicone-treated zinc oxide particle 6, perfluoroalkylphosphate-treated mica 0.5, crosslinked organopolysiloxane spherical powders 4, dimethylpolysiloxane (KF96A-6) 2, fluorinated dimethiconol 1, trimethylsiloxysilicate soln. 6, octyl-p-methoxysilicate 3, p-fluoropolyether 0.5, ethanol 10, ale ext. 1, hamamelis ext. 1, hibiscus ext. 0.5, and water q.s. to 100 % to obtain a sunscreen makeup base.
- IT 56275-01-5D, derivs. 257905-55-8, KF7312J
(cosmetics contg. branched volatile organopolysiloxanes and other polysiloxanes)
- RN 56275-01-5 HCA
- CN Silicic acid, trimethylsilyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 1343-98-2

CMF Unspecified

CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 1066-40-6

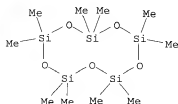
CMF C3 H10 O Si



RN 257905-55-8 HCA
 CN Silicic acid, trimethylsilyl ester, mixt. with
 decamethylcyclopentasiloxane (9CI) (CA INDEX NAME)

CM 1

CRN 541-02-6
 CMF C10 H30 O5 Si5



CM 2

CRN 56275-01-5
 CMF C3 H10 O Si . x Unspecified

CM 3

CRN 1343-98-2
 CMF Unspecified
 CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 4

CRN 1066-40-6
 CMF C3 H10 O Si



IT 1314-13-2, Zinc oxide, biological studies 13463-67-7
 , Titanium oxide, biological studies

(cosmetics contg. branched volatile organopolysiloxanes and other polysiloxanes and sunscreen agents)

RN 1314-13-2 HCA

CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)

O=Zn

RN 13463-67-7 HCA

CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

IT 1185-55-3, Methyltrimethoxysilane

(prepn. of branched volatile organopolysiloxanes for cosmetics)

RN 1185-55-3 HCA

CN Silane, trimethoxymethyl- (6CI, 8CI, 9CI) (CA INDEX NAME)



IC ICM A61K007-00

CC 62-4 (Essential Oils and Cosmetics)

IT Antiperspirants

Deodorants

Sunscreens

Suntanning agents

(cosmetics contg. branched volatile organopolysiloxanes and other polysiloxanes)

IT 541-02-6, KF 995 9005-12-3, Methylphenylpolysiloxane

31692-79-2D, Dimethiconol, fluorinated 56275-01-5D,

derivs. 257905-55-8, KF7312J 314020-17-2, KSG15

319427-75-3, KF 6026

(cosmetics contg. branched volatile organopolysiloxanes and other polysiloxanes)

IT 119-61-9D, Benzophenone, derivs. 1314-13-2, Zinc oxide, biological studies 5466-77-3, 2-Ethylhexyl-p-Methoxycinnamate

13463-67-7, Titanium oxide, biological studies 70356-09-1,

Butyl methoxydibenzoylmethane

(cosmetics contg. branched volatile organopolysiloxanes and other polysiloxanes and sunscreen agents)

IT 75-77-4, Trimethylchlorosilane, reactions 75-79-6,

Methyltrichlorosilane 107-46-0, Hexamethyldisiloxane

1185-55-3, Methyltrimethoxysilane

(prepn. of branched volatile organopolysiloxanes for cosmetics)

L58 ANSWER 11 OF 24 HCA COPYRIGHT 2004 ACS on STN

134:123613 Production of lithographic printing plate, lithographic original plate, and image formation. Hoshi, Satoshi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001022058 A2 20010126, 19 pp. (Japanese). CODEN: JXXXXAF. APPLICATION: JP 1999-190786 19990705.

AB A **layer**, having a hydrophobic surface and contg. an **oxidizable** and a reducible compd., formed on a support is imagewise exposed to actinic ray in the presence of a photocatalytic metal compd. to **convert** the surface of the exposed areas to hydrophilic by imagewise decompn. of the **oxidizable** compd. to form a hydrophilic and hydrophobic imagewise distribution to give the lithog. printing late. A lithog. original late from which a printing plate is obtained by the above process and an image forming process comprising the above process are also claimed. The lithog. printing plate can be obtained easily without development and shows high printing durability.

IT **1314-13-2**, Zinc oxide, uses **13463-67-7**, Titania, uses
(manuf. of lithog. plate using **oxidizable** compd.,
reducible compd., and photocatalytic metal compd.)

RN 1314-13-2 HCA

CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)

O==Zn

RN 13463-67-7 HCA

CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O==Ti==O

IT **1185-55-3**, Methyltrimethoxysilane
(**oxidizable** compd.; manuf. of lithog. plate using
oxidizable compd., reducible compd., and photocatalytic
metal compd.)

RN 1185-55-3 HCA

CN Silane, trimethoxymethyl- (6CI, 8CI, 9CI) (CA INDEX NAME)



- IC ICM G03F007-004
ICS G03F007-004; B41C001-10; B41N001-14; G03F007-00
- CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST lithog printing plate photocatalyst metal compd; **oxidizable** compd lithog plate; reducible compd lithog plate silver nitrate; hydrophilic hydrophobic surface lithog plate
- IT Lithographic plates
(manuf. of lithog. plate using **oxidizable** compd., reducible compd., and photocatalytic metal compd.)
- IT Polysiloxanes, uses
(**oxidizable** compd.; manuf. of lithog. plate using **oxidizable** compd., reducible compd., and photocatalytic metal compd.)
- IT **Catalysts**
(photochem.; manuf. of lithog. plate using **oxidizable** compd., reducible compd., and photocatalytic metal compd.)
- IT **1314-13-2**, Zinc oxide, uses **13463-67-7**, Titania, uses
(manuf. of lithog. plate using **oxidizable** compd., reducible compd., and photocatalytic metal compd.)
- IT 146239-65-8, JSR AE 130
(manuf. of lithog. plate using **oxidizable** compd., reducible compd., and photocatalytic metal compd.)
- IT 78-10-4, Tetraethoxysilane 107-22-2, Glyoxal **1185-55-3**, Methyltrimethoxysilane 9002-89-5, PVA 117 9003-01-4, Poly(acrylic acid) 14814-09-6 17626-93-6, Tetraethylene glycol diglycidyl ether
(**oxidizable** compd.; manuf. of lithog. plate using **oxidizable** compd., reducible compd., and photocatalytic metal compd.)
- IT 7761-88-8, Silver nitrate, uses
(reducible compd.; manuf. of lithog. plate using **oxidizable** compd., reducible compd., and photocatalytic metal compd.)
- L50 ANSWER 12 OF 24 HCA COPYRIGHT 2004 ACS on STN
- 133:327645 Toner for developing electrostatic image and developer using same. Iwamoto, Yasutaka; Watanabe, Kazuto; Yamashita, Masahide; Hasegawa, Kumi (Ricoh Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP

2000298374 A2 20001024, 12 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 1999-106557 19990414.

- AB In the title toner and developer used in an imaging method comprising developing latent images on a latent image carrier, transferring the resulting toner images from the carrier to a transfer material, cleaning the carrier after transfer to recover the toner, and supplying the toner recovered to development side to reuse it, the amt. of the residual monomers in the toner is ≤ 300 ppm. The toner shows stable charging properties and provides clear, high d. images in the above recycle system and the smell of the toner generated upon fixing is decreased.
- IT 1067-57-8D, Butyltrimethoxysilane, titania treated with (electrophotog. toners with controlled residual monomer content to **suppress odor** upon fixing and developers using same)
- RN 1067-57-8 HCA
- CN Silane, butyltrimethoxy- (7CI, 8CI, 9CI) (CA INDEX NAME)



- IT 13463-67-7, Titania, uses (fluidizing agent; electrophotog. toners with controlled residual monomer content to **suppress odor** upon fixing and developers using same)
- RN 13463-67-7 HCA
- CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)



- IC ICM G03G009-08
ICS G03G009-087
- CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- IT Electrophotographic developers
Electrophotographic toners (electrophotog. toners with controlled residual monomer content to **suppress odor** upon fixing and developers using same)
- IT Acrylic polymers, uses
Polyesters, uses (electrophotog. toners with controlled residual monomer content to **suppress odor** upon fixing and developers)

- using same)
- IT Acrylic polymers, uses
(styrene-contg.; electrophotog. toners with controlled residual monomer content to **suppress odor** upon fixing and developers using same)
- IT 1067-57-8D, Butyltrimethoxysilane, titania treated with 7631-86-9, Silica, uses 25767-47-9, Butyl acrylate-styrene copolymer 26659-86-9, Bisphenol A-terephthalic acid copolymer 60842-32-2, Aerosil R 972 87945-57-1
(electrophotog. toners with controlled residual monomer content to **suppress odor** upon fixing and developers using same)
- IT 13463-67-7, Titania, uses
(fluidizing agent; electrophotog. toners with controlled residual monomer content to **suppress odor** upon fixing and developers using same)
- L58 ANSWER 13 OF 24 HCA COPYRIGHT 2004 ACS on STN
133:254206 Manufacture of a hydroxyl group-containing aromatic compound by **catalytic oxidation** with nitrous oxide in the presence of a **catalytically** active inorganic membrane.
Duda, Mark; Hoerpel, Gerhard; Hying, Christian; Kuehnle, Adolf (Creavis Gesellschaft fuer Technologie und Innovation m.b.H., Germany). Ger. Offen. DE 19912643 A1 20000921, 14 pp. (German).
CODEN: GWXXBX. APPLICATION: DE 1999-19912643 19990320.
- AB Benzene is **oxidized** to PhOH with higher conversion and selectivity by treatment with N2O in the presence of an inorg. membrane. Thus, a mixt. of 0.5 g Fe acetylacetonate and Si(OEt)4 8, MeSi(OEt)3 1.8, and EtOH 8 mL was treated with 2 mL 8N HCl to give a gel, which was dried and calcined. Sep. 80 g Ti(OPr-iso)4 was hydrolyzed with 20 g H2O and peptized with 120 g 25% HNO3 to give a soln., to which 40 g TiO2 was added to give a suspension (A). A stainless steel gauze with mesh size 90 μ m was **coated** with suspension A and heated 10 s at 400° to give a noncatalytic membrane, which was **coated** with a suspension of the calcined gel to give a **catalytic** membrane. Passing benzene and N2O countercurrently through a tubular reactor contg. both membranes at 370° produced PhOH with 98% selectivity and 19% benzene conversion.
- IT 13463-67-7, Titanium dioxide, uses
(**catalyst** component; manuf. of phenol by **catalytic oxidn.** of benzene with N2O in the presence of a **catalytically** active inorg. membrane)
- RN 13463-67-7 HCA
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

IT 2031-67-6, Methyltriethoxysilane
 (catalyst precursor; manuf. of phenol by
 catalytic oxidn. of benzene with N2O in the
 presence of a catalytically active inorg. membrane)
 RN 2031-67-6 HCA
 CN Silane, triethoxymethyl- (8CI, 9CI) (CA INDEX NAME)



IC ICM C07C037-60
 ICS C07C039-04; C07B041-02; B01J012-00; B01J035-00; B01J037-00
 CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
 ST benzene oxidn nitrous oxide; catalytic membrane
 phenol manuf
 IT Titanium silicalite
 Zeolite ZSM-5
 (catalyst component; manuf. of phenol by
 catalytic oxidn. of benzene with N2O in the
 presence of a catalytically active inorg. membrane)
 IT Membranes, nonbiological
 (inorg.; manuf. of phenol by catalytic oxidn.
 of benzene with N2O in the presence of a catalytically
 active inorg. membrane)
 IT Oxidation
 (manuf. of phenol by catalytic oxidn. of
 benzene with N2O in the presence of a catalytically
 active inorg. membrane)
 IT 13463-67-7, Titanium dioxide, uses
 (catalyst component; manuf. of phenol by
 catalytic oxidn. of benzene with N2O in the
 presence of a catalytically active inorg. membrane)
 IT 78-10-4, Tetraethoxysilane 546-68-9, Titanium tetraisopropoxide
 2031-67-6, Methyltriethoxysilane 3087-36-3, Tetraethyl
 orthotitanate 14024-18-1, Iron acetylacetonate
 (catalyst precursor; manuf. of phenol by
 catalytic oxidn. of benzene with N2O in the
 presence of a catalytically active inorg. membrane)
 IT 295329-01-0, Dynasilan DSF 8261
 (in catalytic membrane prepn.; manuf. of phenol by
 catalytic oxidn. of benzene with N2O in the
 presence of a catalytically active inorg. membrane)
 IT 108-95-2P, Phenol, preparation

(manuf. of phenol by **catalytic oxidn.** of benzene with N2O in the presence of a **catalytically active inorg. membrane**)

- IT 71-43-2, Benzene, reactions 10024-97-2, Nitrous oxide, reactions (manuf. of phenol by **catalytic oxidn.** of benzene with N2O in the presence of a **catalytically active inorg. membrane**)

L58 ANSWER 14 OF 24 HCA COPYRIGHT 2004 ACS on STN

133:75496 Zinc oxide-containing coating compositions and coating products of the compositions. Takeda, Mitsuo; Ueda, Yumiko; Kubo, Takafumi (Nippon Shokubai Kagaku Kogyo Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000186237 A2 20000704, 19 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-317376 19981109. PRIORITY: JP 1998-292549 19981014.

- AB In the compns. with good UV- and heat-shielding properties and scratch resistance contg. ZnO-based particles and binders, and/or solvents, the ZnO-based particles are composed of 2 kinds and are characterized that (1) the ratio of the sizes of the crystallites measured perpendicularly to (100) and (002) directions [Ds(hkl)] by Shceller method (Cauchy function approxn.), i.e. Ds(002)/Ds(001), ≤ 1.2 and (2) a kind of the particles is elec. conductive and contains 0.1-20 at.% trivalent and/or tetravalent metals but shows ZnO crystallinity by x-ray diffractometry and the other kind of particles is elec. insulating and contains ≤ 0.01 at.% trivalent and/or tetravalent metals. The compns. are applied on substrates to form coated products. Thus, a MEK dispersion of ZnO contg. 0.5% Al with Ds(002)/Ds(100) 0.59 and another MEK dispersion of ZnO with Ds(002)/Ds(100) 0.89 were blended with an acrylic polymer and a polyisocyanate curing agent and dispersed to give a compn., which was applied on a PET film to give a product with visible light transmittance $\geq 75\%$, good UV shielding property, and good resistance to abrasion, weather, scratch, acid, soiling, and thermal **oxidn.**

- IT 1185-55-3

(surface-treatment layer; zinc oxide-contg. UV- and heat-shield coating compns. and coated products)

RN 1185-55-3 HCA

CN Silane, trimethoxymethyl- (6CI, 8CI, 9CI) (CA INDEX NAME)



- IT 1314-13-2, Zinc oxide, uses

(zinc oxide-contg. UV- and heat-shield coating compns. and coated products)

RN 1314-13-2 HCA
CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)

O=Zn

IC ICM C09D007-12
ICS C01G009-02; C09D005-00; C09D005-33
CC 42-13 (Coatings, Inks, and Related Products)
IT **Coating materials**
(abrasion- and scratch-resistant; zinc oxide-contg. UV- and heat-shield coating compns. and coated products)
IT **Coating materials**
(acid-resistant; zinc oxide-contg. UV- and heat-shield coating compns. and coated products)
IT **Coating materials**
(antisoiling, weather-resistant; zinc oxide-contg. UV- and heat-shield coating compns. and coated products)
IT **Coating materials**
(heat-resistant; zinc oxide-contg. UV- and heat-shield coating compns. and coated products)
IT 1185-55-3 2269-22-9 5153-24-2, Zirconyl acetate
18282-10-5, Tin (IV) oxide 21645-51-2, Aluminum hydroxide, uses 122161-66-4, Tetramethoxysilane tetramer
(surface-treatment layer; zinc oxide-contg. UV- and heat-shield coating compns. and coated products)
IT 1314-13-2, Zinc oxide, uses 37275-76-6, Aluminum zinc oxide 52934-06-2, Gallium zinc oxide 117944-65-7, Indium zinc oxide
(zinc oxide-contg. UV- and heat-shield coating compns. and coated products)

L58 ANSWER 15 OF 24 HCA COPYRIGHT 2004 ACS on STN
132:170306 Photocatalytic coating and formation of the coating on panels or wall for environmental pollution control. Nishimori, Hideki; Hashimoto, Akira; Tada, Kiyoshi (Showa Aluminium Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000051708 A2 20000222, 10 pp. (Japanese). CODEN: JEXXAF. APPLICATION: JP 1998-225736 19980810.
AB This photocatalytic coating comprises a condensate product produced by hydrolysis and condensation reactions of trifunctional silane RSi(X)3 and a tetrafunctional silane Si(X)4 (R = alkyl, Ph, or vinyl; X = alkoxyl or a halogen), a TiO_2 particle as a photolysis catalyst, Ag as a disinfecting and fungicidal agent, and Cu as a disinfecting agent and has functions for deodorization, disinfection, and fungicide and excellent processibility and durability to deterioration by light. The coating is formed by

hydrolyzing and condensation-polymg. those silane compds. in the presence of alc. or other org. solvents, a Ag salt, and a Cu salt to obtain a sol, mixing TiO₂ particle with the silane compds. from the beginning of the hydrolysis and condensation-polymn. or with the resultant sol, applying the TiO₂-contg. sol to a substrate of a metal or the like, drying the substrate, and alternatively heating the obtained substrate at ≤500°. The coating may be formed on construction panels and walls for air **deodorization** and stain prevention of the panels and walls by the photocatalytic function.

- IT 2031-67-6, Triethoxymethylsilane
 (photocatalyst-contg. coating by hydrolysis and condensation of;
 photocatalytic coating with **deodorization**,
 disinfection, and fungicidal function)
- RN 2031-67-6 HCA
- CN Silane, triethoxymethyl- (8CI, 9CI) (CA INDEX NAME)



- IT 13463-67-7, Titanium dioxide, processes
 (photocatalytic coating with **deodorization**,
 disinfection, and fungicidal function)
- RN 13463-67-7 HCA
- CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)



- IC ICM B01J035-02
- ICS A01N025-10; A01N025-34; A01N059-06; A01N059-16; A01N059-20;
 C08K003-08; C08K003-22; C08L083-04; C01G023-047
- CC 59-6 (Air Pollution and Industrial Hygiene)
 Section cross-reference(s): 58, 67, 74
- IT Construction materials
 (boards; photocatalytic coating with **deodorization**,
 disinfection, and fungicidal function)
- IT Photolysis catalysts
 (coating on construction panel and wall; photocatalytic coating
 with **deodorization**, disinfection, and fungicidal
 function)
- IT Air purification
 (**deodorization**; photocatalytic coating with
deodorization, disinfection, and fungicidal function)

- IT Cladosporium cladosporioides
Escherichia coli
(disinfection of; photocatalytic coating with **deodorization**, disinfection, and fungicidal function)
- IT Silanes
(multifunctional, photocatalyst-contg. coating by hydrolysis and condensation of; photocatalytic coating with **deodorization**, disinfection, and fungicidal function)
- IT Fungicides
(photocatalytic coating as; photocatalytic coating with **deodorization**, disinfection, and fungicidal function)
- IT Environmental pollution control
Sterilization and Disinfection
Walls (construction)
(photocatalytic coating with **deodorization**, disinfection, and fungicidal function)
- IT 7664-41-7, Ammonia, processes
(decompn. of; photocatalytic coating with **deodorization**, disinfection, and fungicidal function)
- IT 78-10-4, Tetraethoxysilane 2031-67-6,
Triethoxymethylsilane
(photocatalyst-contg. coating by hydrolysis and condensation of; photocatalytic coating with **deodorization**, disinfection, and fungicidal function)
- IT 7440-22-4, Silver, processes 7440-50-8, Copper, processes
21645-51-2, Aluminum hydroxide, processes
(photocatalytic coating contg.; photocatalytic coating with **deodorization**, disinfection, and fungicidal function)
- IT 13463-67-7, Titanium dioxide, processes
(photocatalytic coating with **deodorization**, disinfection, and fungicidal function)
- L58 ANSWER 16 OF 24 HCA COPYRIGHT 2004 ACS on STN
132:24150 Washing bar composition with silicone deposition agent and inorganic benefit agent. Yang, May Wai Kun; Pawson, Emma; Foster, Simon (Cussons (International) Limited, UK). Brit. UK Pat. Appl. GB 2334724 A1 19990901, 15 pp. (English). CODEN: BAXXDU.
APPLICATION: GB 1999-4220 19990225. PRIORITY: GB 1998-3831 19980225.
- AB Thus, a personal cleansing bar contains silicone, surfactants and detergent agents, ≥ 1 inorg. compd. for **deodorizing**, UV stabilization, antibacterial, anti-dandruff, absorbancy, skin smoothing, oil emulsifying, or abrasiveness. An example bar contained dimethicone and titania premix, cetyl alc., stearic acid, paraffin wax, soap, Synperonic A7, NaCl, H₂O, perfume, and glycerin.
- IT 56275-01-5
(deposition agent; washing bar compn. with silicone deposition agent and inorg. benefit agent)

RN 56275-01-5 HCA
 CN Silicic acid, trimethylsilyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 1343-98-2
 CMF Unspecified
 CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 1066-40-6
 CMF C3 H10 O Si



IT 1314-13-2, Zinc oxide, uses 13463-67-7, Titania,
 uses
 (washing bar compn. with silicone deposition agent and inorg.
 benefit agent)

RN 1314-13-2 HCA
 CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)

O==Zn

RN 13463-67-7 HCA
 CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O==Ti==O

IC ICM C11D003-37

ICA C11D017-00

CC 46-5 (Surface Active Agents and Detergents)

IT 9006-65-9, Dimethicone 31692-79-2, Dimethiconol 56275-01-5
 195868-36-1, Phenyltrimethicone

(deposition agent; washing bar compn. with silicone deposition
 agent and inorg. benefit agent)

IT 57-11-4, Stearic acid, uses 144-55-8, Sodium bicarbonate, uses
 471-34-1, Calcium carbonate, uses 546-93-0, Magnesium carbonate
 1314-13-2, Zinc oxide, uses 1332-29-2, Tin oxide

1335-30-4, Aluminum silicate 1343-97-1, Selenium sulfate
 7446-70-0, Aluminum chloride, uses 7631-86-9, Silica, uses
 13463-41-7, Zinc pyrithione **13463-67-7**, Titania, uses
 14807-96-6, Talc, uses 36653-82-4, Cetyl alcohol
 (washing bar compn. with silicone deposition agent and inorg.
 benefit agent)

L58 ANSWER 17 OF 24 HCA COPYRIGHT 2004 ACS on STN

130:131707 Method for supporting photocatalyst particles. Kato, Kenji
 (Matsushita Seiko Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP
 11010005 A2 19990119 Heisei, 8 pp. (Japanese). CODEN: JKXXAF.
 APPLICATION: JP 1997-160810 19970618.

AB Aq. dispersions of photocatalyst particles are applied on supports,
 dried, coated with binder soln., and dried for bonding of the
 particles with other particles and the support. Org. solvent contg.
 dispersion of org. Si compd. having unhydrolyzable functional group
 and hydrolyzate of org. Si compd. using acid is used as the binder
 soln. Effective photolysis is carried out due to adsorbability of
 the binder. The catalysts are for deodorization,
 sterilization, etc.

IT **29656-55-1DP**, Chloropropyltriethoxysilane, reaction products
 with silica gel **86876-45-1DP**,
 Trifluoropropyltriethoxysilane, reaction products with silica gel
 (binder; organosilane and silane hydrolyzate as binders in
 application of photocatalysts on supports)

RN 29656-55-1 HCA

CN Silane, (chloropropyl)triethoxy- (9CI) (CA INDEX NAME)



D1-C1

RN 86876-45-1 HCA

CN Silane, triethoxy(trifluoropropyl)- (9CI) (CA INDEX NAME)



3 (D1-F)

- IT 13463-67-7, Titania, processes
(photocatalyst; organosilane and silane hydrolyzate as binders in application of photocatalysts on supports)
- RN 13463-67-7 HCA
- CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)



- IC ICM B01J035-02
ICS B01J037-02; C01G023-04
- CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 59
- IT 919-30-2DP, reaction products with silica gel 29656-55-IDP
Chloropropyltriethoxysilane, reaction products with silica gel 86876-45-IDP, Trifluoropropyltriethoxysilane, reaction products with silica gel
(binder; organosilane and silane hydrolyzate as binders in application of photocatalysts on supports)
- IT 13463-67-7, Titania, processes
(photocatalyst; organosilane and silane hydrolyzate as binders in application of photocatalysts on supports)
- L58 ANSWER 18-OF-24 HCA COPYRIGHT 2004 ACS on STN
- 129:6864 Sol-gel-derived coatings on steel sheets. Izumi, K.; Minami, N.; Uchida, Y. (Nisshin Steel Co., Ltd., Sakai, 592, Japan). Key Engineering Materials, 150(Sol-Gel Production), 77-87 (English) 1998. CODEN: KEMAEY. ISSN: 1013-9826. Publisher: Trans Tech Publications Ltd..
- AB Requirements for sol-gel coatings are discussed and the properties of coating films prepd. from organo-Zr compds. and trifunctional alkoxy silanes are presented. ZrO₂ coating on stainless steel sheets were produced in air from Zr-tetraoctylate or Zr-acetylacetonate. The improved oxidn. resistance of the coated steel is a function of film thickness. Good adhesion of the coating film

prepd. from methyltrialkoxysilane after bending, drawing, and pressing of the steel sheets was obtained at firing temps. from 200-300°. This is ascribed to a flexible film structure due to remaining Si-CH₃ and Si-OH bonds.

IT 1314-23-4, Zirconium dioxide, uses
(coating; sol-gel-derived coatings on steel sheets)
RN 1314-23-4 HCA
CN Zirconium oxide (ZrO₂) (8CI, 9CI) (CA INDEX NAME)



IT 780-69-8, Phenyl triethoxysilane 2031-67-6, Methyl triethoxysilane
(sol-gel-derived coatings on steel sheets)
RN 780-69-8 HCA
CN Silane, triethoxyphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 2031-67-6 HCA
CN Silane, triethoxymethyl- (8CI, 9CI) (CA INDEX NAME)



CC 55-6 (Ferrous Metals and Alloys)
Section cross-reference(s): 42
ST stainless steel coating organozirconium compd; sol gel coating
oxidn resistance steel
IT Coating materials
(anticorrosive; sol-gel-derived coatings on steel sheets)
IT Coating process
(sol-gel; sol-gel-derived coatings on steel sheets)
IT 1314-23-4, Zirconium dioxide, uses
(coating; sol-gel-derived coatings on steel sheets)
IT 78-10-4, Tetraethoxysilane 780-69-8, Phenyl triethoxysilane 2031-67-6, Methyl triethoxysilane 7449-59-4, Zirconium tetraoctylate 17501-44-9, Zirconium

acetylacetonate
(sol-gel-derived coatings on steel sheets)

- L58 ANSWER 19 OF 24 HCA COPYRIGHT 2004 ACS on STN
- 128:68366 Effects of Water, Salt Water, and Silicone **Overcoating** of the TiO₂ Photocatalyst on the Rates and Products of Photocatalytic **Oxidation** of Liquid 3-Octanol and 3-Octanone. Sunada, Futoshi; Heller, Adam (Department of Chemical Engineering, The University of Texas at Austin, Austin, TX, 78712-1062, USA). Environmental Science and Technology, 32(2), 282-286 (English) 1998. CODEN: ESTHAG. ISSN: 0013-936X. Publisher: American Chemical Society.
- AB The environment of the TiO₂ photocatalyst affects the rate and the ratio of products generated in the photocatalytic **oxidn.** of liq. 3-octanol and 3-octanone. The rates and products were detd. with two photocatalysts, one directly soln.-contacting and hydrophilic, the other embedded in a poly(methylsiloxane) and hydrophobic: in the neat org. reactant, without added water; with added water; and with NaCl (0.5 M) in the water. 3-Octanone was **oxidized** to CO₂ and to two org. phase extd. products n-hexanoic acid and n-pentanal. The org. phase extd. initial **oxidn.** products of 3-octanol were 3-octanone, n-hexanal, and n-pentanal. The CO₂ evolution rate was highest in neat 3-octanone when the hydrophilic photocatalyst was in direct contact with the liq. reactant, in which the **catalyst** particles were uniformly dispersed. When water was added, this photocatalyst resided at the liq.-liq. interface, and the rate of CO₂ evolution was reduced. The rate was further reduced when NaCl was added. When the TiO₂ was embedded in the hydrophobic silicone, the photocatalyst remained dispersed in the org. phase, and the reaction was not inhibited by NaCl. The rate of CO₂ formation now exceeded that for the hydrophilic **catalyst**.
- IT 13463-67-7, Titania, processes
(effects of titania **catalyst** environment on photocatalytic **oxidn.** of liq. octanol and octanone)
- RN 13463-67-7 HCA
- CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)
- O=Ti=O
- IT 1185-55-3
(in prepn. of hydrophilic poly(methylsiloxane) embedded titania **catalyst** for photocatalytic **oxidn.** of liq. octanol and octanone)
- RN 1185-55-3 HCA
- CN Silane, trimethoxymethyl- (6CI, 8CI, 9CI) (CA INDEX NAME)



- CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST titania photocatalytic **oxidn** octanol octanone
- IT Ceramics
 (aluminosilicate; prepn. of hydrophilic poly(methylsiloxane) embedded titania **catalyst** for photocatalytic **oxidn.** of liq. octanol and octanone)
- IT Aluminosilicates, uses
 (ceramics; prepn. of hydrophilic poly(methylsiloxane) embedded titania **catalyst** for photocatalytic **oxidn.** of liq. octanol and octanone)
- IT **Oxidation**, photochemical
 (effects of titania **catalyst** environment on photocatalytic **oxidn.** of liq. octanol and octanone)
- IT **Oxidation catalysts**
Oxidation kinetics
 (photooxidn.; effects of titania **catalyst** environment on photocatalytic **oxidn.** of liq. octanol and octanone)
- IT 13463-67-7, Titania, processes
 (effects of titania **catalyst** environment on photocatalytic **oxidn.** of liq. octanol and octanone)
- IT 66-25-1, n-Hexanal. 109-52-4, Pentanoic acid, processes. 110-62-3, n-Pentanal 124-38-9, Carbon dioxide, processes 142-62-1, n-Hexanoic acid, processes
 (effects of titania **catalyst** environment on photocatalytic **oxidn.** of liq. octanol and octanone)
- IT 106-68-3, 3-Octanone. 589-98-0, 3-Octanol
 (effects of titania **catalyst** environment on photocatalytic **oxidn.** of liq. octanol and octanone)
- IT 7647-14-5, Sodium chloride, properties 7732-18-5, Water, properties
 (effects of titania **catalyst** environment on photocatalytic **oxidn.** of liq. octanol and octanone)
- IT 1185-55-3
 (in prepn. of hydrophilic poly(methylsiloxane) embedded titania **catalyst** for photocatalytic **oxidn.** of liq. octanol and octanone)
- IT 7782-44-7, Oxygen, reactions
 (in prepn. of hydrophilic poly(methylsiloxane) embedded titania **catalyst** for photocatalytic **oxidn.** of liq. octanol and octanone)

- IT 200295-77-8, Cenolite C
(prepn. of hydrophilic poly(methylsiloxane) embedded titania
catalyst for photocatalytic oxidn. of liq.
octanol and octanone)
- L58 ANSWER 20 OF 24 HCA COPYRIGHT 2004 ACS on STN
126:21940 Inclusion of fluorophores in hybrid sol-gel coatings;
application to in situ temperature measurements. Audebert, P.;
Bresson, F.; Devillers, R.; Tribillon, G. (Laboratoire de Chimie
Organique, Université de Franche-Comté, La Bouloie, route de Gray,
Besançon, 25030, Fr.). Synthetic Metals, 81(2-3, 2nd Japan-France
Joint Forum (JFJF'2) on Organic Materials and Optoelectronic
Devices, 1995), 315-318 (English) 1996. CODEN: SYMEDZ. ISSN:
0379-6779. Publisher: Elsevier.
- AB New org.-inorg. sol-gel films have been prepd. starting from a mixt.
of silicon and zirconium alkoxides using a synthesis process of
several steps. Coatings loaded with a fluorescent $\text{CaF}_2\text{:Yr}^{2+}$ powder
have been deposited on stainless steel rendered adhesive by a
special **oxidative** surface treatment. The final deposits
have successfully supported drastic adherence std. tests after
several dips into liq. nitrogen, and have been used for
temp.-dependent fluorescence decay measurement. The loaded gels
have been coated on a rotating cylinder into liq. nitrogen and the
fluorescence decay measurement device is described. Efficient
measurements can be registered at rotating speeds as fast as 4000
rpm.
- IT 1314-23-4P, Zirconia, preparation
(coatings, silica-zirconia, hybrid; sol-gel prep. of adhesive
fluorescent org.-inorg. hybrid coatings for steel and application
to in situ temp. measurements)
- RN 1314-23-4 HCA
CN Zirconium oxide (ZrO_2) (8CI, 9CI) (CA INDEX NAME)
- $\text{O}=\text{Zr}=\text{O}$
- IT 78-62-6, Dimethyldiethoxysilane 2031-67-6,
Triethoxymethylsilane
(precursor; sol-gel prep. of adhesive fluorescent org.-inorg.
hybrid coatings for steel and application to in situ temp.
measurements)
- RN 78-62-6 HCA
CN Silane, diethoxydimethyl- (8CI, 9CI) (CA INDEX NAME)



RN 2031-67-6 HCA
CN Silane, triethoxymethyl- (8CI, 9CI) (CA INDEX NAME)



CC 57-2 (Ceramics)
IT **Coating process**
(sol-gel; sol-gel prepn. of adhesive fluorescent org.-inorg. hybrid coatings for steel and application to in situ temp. measurements)
IT **1314-23-4P**, Zirconia, preparation 7631-86-9P, Silica, preparation
(coatings, silica-zirconia, hybrid; sol-gel prepn. of adhesive fluorescent org.-inorg. hybrid coatings for steel and application to in situ temp. measurements)
IT **78-62-6**, Dimethyldiethoxysilane 2031-67-6, Triethoxymethylsilane 52892-19-0
(precursor; sol-gel prepn. of adhesive fluorescent org.-inorg. hybrid coatings for steel and application to in situ temp. measurements)

L58 ANSWER 21 OF 24 HCA COPYRIGHT 2004 ACS on STN
117:234755 Manufacture of porous inorganic materials based on hydrolyzed silanes as **deodorants**. Yokogawa, Hiroshi; Yokoyama, Masaru; Takahama, Koichi; Kamigaki, Yuriko (Matsushita Electric Works, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 04198237 A2 19920717 Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1990-327242 19901127.

AB The title materials, light-transmitting with high sp. surface area and useful as **deodorants** for air fresheners, are prepd. by hydrolyzing silanes $\text{R}_n\text{Si}(\text{OR})_{4-n}$ ($\text{R}_1-2 = \text{C}_1-5$ alkyl, Ph; $n = 0-2$) and supercrit. drying of the resulting gels while dispersing ≥ 1 colloidal inorg. compd., cationic inorg. compd., and/or metal alkoxide in the compns. before gelling. A hydrolyzate of $(\text{EtO})_4\text{Si}$ was mixed with a hydrolyzate of $(\text{PrO})_4\text{Ti}$ and allowed to

gel, and the gel was mixed with EtOH, aged at 50°, placed under CO₂ at 18°/55 atm to replace EtOH with CO₂, and dried under CO₂ at 40°/80 atm to give a porous material with sp. surface area 854 m²/g, bulk d. 0.14 g/cm³, and light transmission 79%. A sheet (5 + 15 + 15 cm) of the material in a box (vol. 2.5 m³) contg. a gas with NH₃ concn. 50 ppm reduced the concn. of NH₃ to 2 ppm during 10 min.

IT 1112-39-6DP, Dimethyldimethoxysilane, hydrolyzates
 1185-55-3DP, Methyltrimethoxysilane, hydrolyzates
 (manuf. of porous, transparent, inorg. colloid-contg., as deodorants)
 RN 1112-39-6 HCA
 CN Silane, dimethoxydimethyl- (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 1185-55-3 HCA
 CN Silane, trimethoxymethyl- (6CI, 8CI, 9CI) (CA INDEX NAME)



IT 13463-67-7, Titania, miscellaneous
 (sols, siloxanes contg. silica sols and, as deodorants)
 RN 13463-67-7 HCA
 CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)



IC ICM C08J009-28
 CC 35-6 (Chemistry of Synthetic High Polymers)
 ST transparency silicate titanate polymer; porosity silicate titanate polymer; deodorant silicate titanate polymer; absorbent silicate titanate polymer
 IT Siloxanes and Silicones, uses
 (deodorants, contg. inorg. colloids, porous, transparent)
 IT Deodorants

- (siloxanes contg. inorg. colloids, porous, transparent)
- IT Transparent materials
(siloxanes, contg. inorg. colloids, porous, as **deodorants**)
- IT Drying
(supercrit., of siloxanes contg. inorg. colloids, for **deodorants**)
- IT 124-38-9, Carbon dioxide, uses
(drying by, of alkoxysilane hydrolyzates contg. inorg. colloids, for **deodorants**)
- IT 78-10-4DP, Tetraethoxysilane, hydrolyzates 681-84-5DP, Tetramethoxysilane, hydrolyzates 1112-39-6DP, Dimethyldimethoxysilane, hydrolyzates 1185-55-3DP, Methyltrimethoxysilane, hydrolyzates
(manuf. of porous, transparent, inorg. colloid-contg., as **deodorants**)
- IT 3087-37-4D, Tetrapropoxytitanium, hydrolyzates
(siloxanes contg., manuf. of porous, transparent, as **deodorants**)
- IT 7550-45-0D, Titanium tetrachloride, hydrolyzates
(siloxanes contg., porous, transparent, as **deodorants**)
- IT 13463-67-7, Titania, miscellaneous
(sols, siloxanes contg. silica sols and, as **deodorants**)
- IT 7631-86-9, Silica, miscellaneous
(sols, siloxanes contg. titania sols and, as **deodorants**)
- L58 ANSWER 22 OF 24 HCA COPYRIGHT 2004 ACS on STN
- 116:135528 Performance-oriented packaging standards; changes to classification, hazard communication, packaging and handling requirements based on UN standards and agency initiative. (United States Dept. of Transportation, Washington, DC, 20590-0001, USA). Federal Register, 55(246), 52402-729 (English) 21 Dec 1990. CODEN: FEREC. ISSN: 0097-6326.
- L58 ANSWER 23 OF 24 HCA COPYRIGHT 2004 ACS on STN
- 112:162980 Manufacture of colored stainless steel strips resistant to wear, heat, and finger print. Murakami, Megumi; Deguchi, Takenori; Izumi, Keiji; Tanaka, Hidetoshi (Nisshin Steel Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 01149966 A2 19890613 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1987-307397 19871207.
- AB The title strips are manufd. by dipping them into an aq. H2CrO4 and H2SO4, and subsequent coating with a metal oxide layer for resistance to wear, heat, and finger print. The metal oxide layer is formed by using an alc. soln. contg. ≥0.05% of an alkoxide, acetylacetonate complex, or octanoate of Si, Al, Ti, or Zr followed by heating at 200-500°.
- IT 2031-67-6, Monomethyltriethoxysilane

(coating with aq. bath contg., of **oxidn.**-colored stainless steel, for resistance to heat and finger print)

RN 2031-67-6 HCA

CN Silane, triethoxymethyl- (8CI, 9CI) (CA INDEX NAME)



IT 1314-23-4, Zirconia, uses and miscellaneous

13463-67-7, Titania, uses and miscellaneous

(coating with, of **oxidn.**-colored stainless steel, for resistant to heat and finger print)

RN 1314-23-4 HCA

CN Zirconium oxide (ZrO₂) (8CI, 9CI) (CA INDEX NAME)



RN 13463-67-7 HCA

CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)



IC ICM C23C018-12

ICS C23C022-83

CC 55-6 (Ferrous Metals and Alloys)

ST stainless steel **oxidn** coloring coating; metal oxide coating stainless steel; alkoxide coating stainless steel; acetylacetonate coating stainless steel; octanoate coating stainless steel; chromic acid **oxidn** coloring steel

IT **Coating process**

(with metal oxide, of stainless steel, in manuf. of colored strips)

IT 11109-50-5, SUS 304 11109-52-7, SUS 430

(coating of **oxidn.** colored, with metal oxide, for resistance to heat and finger print)

IT 546-68-9 555-31-7, Aluminum isopropoxide 2031-67-6, Monomethyltriethoxysilane 2171-98-4, Zirconium isopropoxide 5206-47-3, Zirconium octanoate 7631-86-9, Silica, uses and miscellaneous 11099-06-2, Ethyl silicate 13963-57-0, Aluminum acetylacetonate 17501-44-9, Zirconium acetylacetonate 17501-79-0, Titanium acetylacetonate (coating with aq. bath contg., of **oxidn.**-colored

- stainless steel, for resistance to heat and finger print)
- IT 1314-23-4, Zirconia, uses and miscellaneous 1344-28-1, Alumina, uses and miscellaneous 13463-67-7, Titania, uses and miscellaneous
(coating with, of oxidn.-colored stainless steel, for resistant to heat and finger print)
- IT 7664-93-9, Sulfuric acid, uses and miscellaneous 7738-94-5, Chromic acid (H₂CrO₄)
(oxidn. coloring bath contg., in coating of stainless steel with metal oxide)
- L58 ANSWER 24 OF 24 HCA COPYRIGHT 2004 ACS on STN
- 108:10481 Method for producing multilayer, decorative, bituminous, protective coatings with improved weather resistance. Gottfried, Rudolf; Herzog, Rainer; Mann, Juergen; Linde, Klaus (Bauakademie der DDR, Institut fuer Wohnungs- und Gesellschaftsbau, Ger. Dem. Rep.). Ger. (East) DD 245891 Al 19870520, 4 pp. (German). CODEN: GEXXA8. APPLICATION: DD 1986-286863 19860207.
- AB The title coatings are produced by spreading 100-400 g/m² primer on dry, absorbent concrete plates that immediately absorb the entire amt. without forming a layer, allowing a drying period of at least 1-2 days or 2-8 h for hot-air drying, spreading 1-10 kg/m² material on the dry surfaces as a main coating, which is dried at, e.g., 288-333 K, and spreading 100-300 g/m² of the material as a top coating on the dried main coating. This last step may be performed after the construction. These coatings are durable and are useful for flat and gable roofs. Thus, 1 h after warming, a concrete gable roof element, at 315 K, was treated with a 400 g/m² of a mixt. consisting of bitumen 20, white spirit 50, trichloroethylene 10, BuOAc 5, and MIBK 15 wt.%. Drying was carried out using hot air. After 2 h the element was coated with 10 kg/m² of a mixt. of bitumen dispersion 30, caoutchouc 20, kaolin 5, and (total) water 45 wt.%. Drying was carried out with hot air for 48 h. A final coat was applied in an amt. of 100 g/m² and consisting of bitumen 40, polyvinyl iso-Bu ether 5, polysiloxane resin (90 Ph and 90 Me groups per 100 Si atoms) 5, tricresyl phosphate 5, dioctyl phthalate 5, Al bronze 6, Fe oxide yellow 4, xylene 15, and turpentine oil 15 wt.%. The element was ready for transport in 24 h.
- IT 1309-37-1, Iron oxide red, uses and miscellaneous
(bituminous top coats contg., in coating of concrete roofing slabs)
- RN 1309-37-1 HCA
- CN Iron oxide (Fe₂O₃) (8CI, 9CI) (CA INDEX NAME)
- *** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
- IT 780-69-8, Phenyltriethoxy silane
(surface impregnation by solns. contg., in coating of concrete roofing slabs with bitumen compns.)
- RN 780-69-8 HCA

CN Silane, triethoxyphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



- IC ICM C08L095-00
ICS E04B001-62
- CC 58-4 (Cement, Concrete, and Related Building Materials)
- IT Pigments
(metallic and **oxidic**, bituminous top coats contg., in coating of concrete roofing slabs)
- IT **Coating process**
(of concrete roofing slabs, with multiple bituminous coatings)
- IT **1309-37-1**, Iron oxide red, uses and miscellaneous
9003-44-5, Poly(vinyl isobutyl ether) 9003-49-0, Acrylic acid, butyl ester, homopolymer 51274-00-1, Iron oxide yellow
(bituminous top coats contg., in coating of concrete roofing slabs)
- IT **780-69-8**, Phenyltriethoxy silane 11099-06-2, Ethyl silicate
(surface impregnation by solns. contg., in coating of concrete roofing slabs with bitumen comps.)
- => d 159 1-12 cbib.abs hitstr.hitind
- L59 ANSWER 1 OF 12 HCA COPYRIGHT 2004 ACS on STN
- 138:206819 **Oxidation** of Cyclohexene with Hydrogen Peroxide
Using Zirconia-Silica Mixed Oxides: Control of the Surface Hydrophilicity and Influence on the Activity of the **Catalyst** and Hydrogen Peroxide Efficiency. Morandin, Marco; Gavagnin, Roberta; Pinna, Francesco; Strukul, Giorgio (Department of Chemistry and Consorzio INSTM, University of Venice, Venice, 30123, Italy). Journal of Catalysis, 212(2), 193-200 (English) 2002. CODEN: JCTLA5. ISSN: 0021-9517. Publisher: Elsevier Science.
- AB ZrO2/SiO2 were prepd. by a sol-gel process under basic conditions to yield mesoporous solids. Surface modification with was carried out by addn. of methyltriethoxysilane during prepn. The extent of methylation controls the surface area, porosity and **catalytic** activity of the solids in **oxidn.** of cyclohexene with H2O2 to give cyclohexandiol. An increase in surface methylation results in a four-fold increase in the specific activity and up to 85% efficiency in the use of H2O2.
- IT **1314-23-4**, Zirconia, uses 2031-67-6,

Methyltriethoxysilane

(cyclohexene **oxidn.** to cyclohexandiol with H2O2 using
methyltriethoxysilane-modified ZrO2/SiO2 **catalysts**)

RN 1314-23-4 HCA

CN Zirconium oxide (ZrO2) (8CI, 9CI) (CA INDEX NAME)



RN 2031-67-6 HCA

CN Silane, triethoxymethyl- (8CI, 9CI) (CA INDEX NAME)



CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
Section cross-reference(s): 67

ST cyclohexene **oxidn** modified zirconia silica
catalyst; cyclohexandiol prepn cyclohexene **oxidn**
catalyst

IT Oxidation **catalysts**

(cyclohexene **oxidn.** to cyclohexandiol with H2O2 using
methyltriethoxysilane-modified ZrO2/SiO2 **catalysts**)

IT 1314-23-4, Zirconia, uses 2031-67-6,

Methyltriethoxysilane 7631-86-9, Silica, uses

(cyclohexene **oxidn.** to cyclohexandiol with H2O2 using
methyltriethoxysilane-modified ZrO2/SiO2 **catalysts**)

IT 931-17-9P, 1,2-Cyclohexanediol

(cyclohexene **oxidn.** to cyclohexandiol with H2O2 using
methyltriethoxysilane-modified ZrO2/SiO2 **catalysts**)

IT 110-83-8, Cyclohexene, reactions

(cyclohexene **oxidn.** to cyclohexandiol with H2O2 using
methyltriethoxysilane-modified ZrO2/SiO2 **catalysts**)

IT 7722-84-1, Hydrogen peroxide, reactions

(cyclohexene **oxidn.** to cyclohexandiol with H2O2 using
methyltriethoxysilane-modified ZrO2/SiO2 **catalysts**)

L59 ANSWER 2 OF 12 HCA COPYRIGHT 2004 ACS on STN

138:25070 **Catalysts** for carboxylic acid ester synthesis and
production method of carboxylic acid esters. Hayashi, Toshio
(Nippon Shokubai Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP
2002361086 A2 20021217, 11 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 2001-167740 20010604.

AB Title **catalysts** for reaction of aldehydes and alcs. under

oxygen comprise ultra fine gold particles with av. particle diam. ≤ 6 nm supported with inorg. oxides. Thus, 40 g AC 12R (γ -alumina) and 500 mL 10 mmol aq. chloroauric acid were stirred at 65°-70° for 1 h at pH 7, washed with water, dried at 100° for 10 h, and baked at 300° for 3 h under air to give an alumina-supported gold with gold content 4.6% and av. particle diam. ≤ 5 nm, which was used for synthesis of Me methacrylate from methacrolein and methanol giving methacrolein conversion 88%, Me methacrylate selectivity 85%, yield 75%, and Me methacrylate synthetic activation 13.6 mol/h/kg-catalyst.

IT 1309-37-1P, Iron trioxide, preparation
 (catalyst, gold supported with; prepn. of
 catalysts for carboxylic acid ester synthesis)
 RN 1309-37-1 HCA
 CN Iron oxide (Fe2O3) (8CI, 9CI) (CA INDEX NAME)
 *** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
 IT 1314-13-2, Zinc oxide, uses 1314-23-4, Zirconia,
 uses 13463-67-7, Titania, uses
 (catalyst, gold supported with; prepn. of
 catalysts for carboxylic acid ester synthesis)
 RN 1314-13-2 HCA
 CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)

O=Zn

RN 1314-23-4 HCA
 CN Zirconium oxide (ZrO2) (8CI, 9CI) (CA INDEX NAME)

O=Zr=O

RN 13463-67-7 HCA
 CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

IT 1825-61-2DP, Methoxytrimethylsilane, reaction products with
 lanthanum silicon oxide
 (prepn. of catalysts for carboxylic acid ester
 synthesis)
 RN 1825-61-2 HCA
 CN Silane, methoxytrimethyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



- IC ICM B01J023-52
ICS B01J023-66; B01J023-89; C07C067-44; C07C069-24; C07C069-54;
C07C069-67; C07C069-78; C07B061-00
- CC 35-2 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 45, 67
- ST **catalyst** carboxylic acid ester synthesis; alumina
supported gold **catalyst** methyl methacrylate prepn
- IT Oxides (inorganic), uses
(**catalysts**, gold supported with; prepn. of
catalysts for carboxylic acid ester synthesis)
- IT Esterification **catalysts**
(**oxidative**, inorg. oxide-supported gold; prepn. of
catalysts for carboxylic acid ester synthesis)
- IT Alcohols, reactions
Aldehydes, reactions
(reactant in carboxylic acid ester prepn.; prepn. of
catalysts for carboxylic acid ester synthesis)
- IT 159101-44-7DP, Lanthanum silicon oxide, trimethylsilyl derivs.
(**catalyst**, gold supported with; prepn. of
catalysts for carboxylic acid ester synthesis)
- IT 1309-37-1P, Iron trioxide, preparation 52337-09-4P,
Silicon titanium oxide 159101-47-0P, Cerium silicon oxide
159747-44-1P, Silicon zinc oxide 159995-97-8P, Aluminum silicon
oxide 478070-49-4P, Lead magnesium silicon oxide
(**catalyst**, gold supported with; prepn. of
catalysts for carboxylic acid ester synthesis)
- IT 159101-44-7P, Lanthanum silicon oxide
(**catalyst**, gold supported with; prepn. of
catalysts for carboxylic acid ester synthesis)
- IT 1314-13-2, Zinc oxide, uses 1314-23-4, Zirconia,
uses 13463-67-7, Titania, uses
(**catalyst**, gold supported with; prepn. of
catalysts for carboxylic acid ester synthesis)
- IT 7440-57-5P, Gold, preparation
(**catalyst**, inorg. oxide-supported; prepn. of
catalysts for carboxylic acid ester synthesis)
- IT 1825-61-2DP, Methoxytrimethylsilane, reaction products with
lanthanum silicon oxide
(prepn. of **catalysts** for carboxylic acid ester
synthesis)

- IT 7631-86-9, CariAct Q 10, uses
(prepn. of **catalysts** for carboxylic acid ester synthesis)
- IT 80-62-6P, Methyl methacrylate 96-33-3P, Methyl acrylate
97-62-1P, Ethyl isobutyrate 105-37-3P, Ethyl propionate
922-68-9P 2315-68-6P, Propyl benzoate
(prepn. of **catalysts** for carboxylic acid ester synthesis)
- IT 5593-70-4, Titanium n-butoxide 6080-56-4 7782-61-8 7784-27-2,
Aluminum nitrate nonahydrate 10196-18-6, Zinc nitrate hexahydrate
10277-43-7, Lanthanum nitrate hexahydrate 16674-78-5, Magnesium
acetate tetrahydrate 16903-35-8, Chloroauric acid 17309-53-4,
Cerium nitrate
(prepn. of **catalysts** for carboxylic acid ester synthesis)
- IT 64-17-5, Ethyl alcohol, reactions 67-56-1, Methanol, reactions
71-23-8, 1-Propanol, reactions 78-84-2 78-85-3, Methacrolein
100-52-7, Benzaldehyde, reactions 107-02-8, Acrolein, reactions
107-22-2, Glyoxal 123-38-6, Propionaldehyde, reactions
(reactant in carboxylic acid ester prepn.; prepn. of **catalysts** for carboxylic acid ester synthesis)
- IT 1344-28-1, γ -Alumina, uses
(γ -, **catalyst**, AC 12R, gold supported with;
prepn. of **catalysts** for carboxylic acid ester synthesis)
- L59 ANSWER 3 OF 12 HCA COPYRIGHT 2004 ACS on STN
- 137:155289 Continuous process for the synthesis of nano-scale precious metal particles. Sturmann, Martin; Weisbeck, Markus; Wegener, Gerhard; Zbrozek, Frank (Bayer Aktiengesellschaft, Germany). U.S. Pat. Appl. Publ. US 2002115873 A1 20020822, 9 pp. (English). CODEN: USXXCO. APPLICATION: US 2002-74274 20020212. PRIORITY: DE 2001-10107777 20010216.
- AB The present invention relates to the continuous prodn. of nano-scale precious metal particles on SiH-contg. support materials, the compns. themselves, and the use of these precious metal-contg. compns. as **catalyst**. The continuous process according to the invention includes impregnating support materials and, after thermal activation, drying the support materials by spraying or by fluidized bed technol. leads to form precious metal-contg. support compns. that are active in the **catalysis of oxidn.** reactions. The **catalytically** active precious metal-contg. support compns. exhibit high selectivities and productivities and have very long **catalyst** service lives without deactivation. The invention also relates to a process for the **oxidn.** of hydrocarbons in the presence of oxygen, a reducing agent and the precious-metal contg. support compns. of the present invention.

IT 1185-55-3, Methyl trimethoxysilane 13463-67-7,
Titanium oxide, uses
(continuous process for synthesis of nano-scale precious metal
particles)
RN 1185-55-3 HCA
CN Silane, trimethoxymethyl- (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 13463-67-7 HCA
CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)



IC ICM B01J023-40
ICS C07D301-10
NCL 549534000
CC 35-2 (Chemistry of Synthetic High Polymers)
ST nano scale precious metal **oxidn catalyst**
propylene oxide prepn
IT **Oxidation catalysts**
(continuous process for synthesis of nano-scale precious metal
particles)
IT 998-30-1, Triethoxysilane 1185-55-3, Methyl
trimethoxysilane 5593-70-4, Tetrabutoxytitanium 7631-86-9,
Silicon oxide, uses 11098-99-0, Molybdenum oxide
13463-67-7, Titanium oxide, uses 16903-35-8,
Tetrachloroauric acid
(continuous process for synthesis of nano-scale precious metal
particles)
L59 ANSWER 4 OF 12 HCA COPYRIGHT 2004 ACS on STN
135:195932 **Catalysts** for preparation of epoxides and
manufacture of the **catalysts**. Hayashi, Toshio; Inagaki,
Takahiro; Wada, Masahiro (Nippon Shokubai Kagaku Kogyo Co., Ltd.,
Japan). Jpn. Kokai Tokkyo Koho JP 2001232194 A2 20010828, 16 pp.
(Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-52194 20000223.
AB The **catalysts**, useful to partially **oxidize**
unsatd. hydrocarbons into epoxides, are ultrafine Au particles fixed
on Ti and/or Zr oxide-contg. supports having a NH₃ loss content of
≤0.1 m-mol/g at 50-400° for NH₃ absorbed at
≤50°. A support (prepd. from Ti oxide

acetylacetonate, KOMe, NaOMe, and SiO₂ base) was soaked in a MeOH soln. contg. dimethylgold acetylacetonate, distd., and baked to give a Au-fixed **catalyst** with NH₃ loss content of 0.043 m-mol/g, which was used in **oxidn.** of C₃H₆ for 0.5 h to form propylene oxide in 4.1% yield and showing good **catalyst** recovery ability.

- IT 13463-67-7P, Titania, preparation
(alkoxysilane-treated; manuf. of Au on Ti and/or Zr oxide support **catalysts** for **oxidn.** of olefins to epoxides)
RN 13463-67-7 HCA
CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)



- IT 1185-55-3, Methyltrimethoxysilane
(**catalyst** support treating agent; manuf. of Au on Ti and/or Zr oxide support **catalysts** for **oxidn.** of olefins to epoxides)
RN 1185-55-3 HCA
CN Silane, trimethoxymethyl- (6CI, 8CI, 9CI) (CA INDEX NAME)



- IC ICM B01J023-52
ICS B01J023-58; B01J032-00; C07D301-10; C07B061-00
CC 35-2 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 67
ST gold fixed oxide support **catalyst** olefin **oxidn**
epoxide
IT Epoxidation **catalysts**
(manuf. of Au on Ti and/or Zr oxide support **catalysts** for **oxidn.** of olefins to epoxides)
IT Oxides (inorganic), preparation
(manuf. of Au on Ti and/or Zr oxide support **catalysts** for **oxidn.** of olefins to epoxides)
IT Epoxides
(manuf. of Au on Ti and/or Zr oxide support **catalysts** for **oxidn.** of olefins to epoxides)
IT Alkenes, reactions
(manuf. of Au on Ti and/or Zr oxide support **catalysts** for **oxidn.** of olefins to epoxides)
IT 13463-67-7P, Titania, preparation

- (alkoxysilane-treated; manuf. of Au on Ti and/or Zr oxide support **catalysts** for oxidn. of olefins to epoxides)
- IT 7631-86-9, Silica, uses
(base of **catalyst** support; manuf. of Au on Ti and/or Zr oxide support **catalysts** for oxidn. of olefins to epoxides)
- IT 110-86-1, Pyridine, uses 1185-55-3, Methyltrimethoxysilane
(**catalyst** support treating agent; manuf. of Au on Ti and/or Zr oxide support **catalysts** for oxidn. of olefins to epoxides)
- IT 624-64-6, trans-2-Butene
(**catalyst** support treating agent; manuf. of Au on Ti and/or Zr oxide support **catalysts** for oxidn. of olefins to epoxides)
- IT 7440-57-5P, Gold, preparation 59818-39-2P, Potassium sodium titanium oxide 356796-93-5P 356796-94-6P 356796-95-7P
(manuf. of Au on Ti and/or Zr oxide support **catalysts** for oxidn. of olefins to epoxides)
- IT 75-56-9P, Propylene oxide, preparation 3266-23-7P, 2,3-Epoxybutane
(manuf. of Au on Ti and/or Zr oxide support **catalysts** for oxidn. of olefins to epoxides)
- IT 115-07-1, Propylene, reactions 590-18-1, cis-2-Butene
(manuf. of Au on Ti and/or Zr oxide support **catalysts** for oxidn. of olefins to epoxides)
- IT 124-41-4, Sodium methoxide 546-68-9, Titanium tetraisopropoxide 865-33-8, Potassium methoxide 3153-26-2 4119-52-2, Iron thiocyanate 13963-57-0, Aluminum trisacetylacetonate 14024-56-7, Magnesium acetylacetonate 14024-63-6, Zinc acetylacetonate 14024-64-7 14284-93-6 14951-50-9 17501-44-9, Zirconium tetrakis(acetylacetonate) 17524-05-9, Molybdenum dioxide bis(acetylacetonate) 18923-99-4
(precursor; manuf. of Au on Ti and/or Zr oxide support **catalysts** for oxidn. of olefins to epoxides)

L59 ANSWER 5 OF 12 HCA COPYRIGHT 2004 ACS on STN

134:6105 Microporous Zirconia-Silica Mixed Oxides Made by Sol-Gel as **Catalysts** for the Liquid-Phase Oxidation of Olefins with Hydrogen Peroxide. Palazzi, Chiara; Oliva, Liliana; Signoretto, Michela; Strukul, Giorgio (Department of Chemistry, University of Venice, Venice, 30123, Italy). Journal of Catalysis, 194(2), 286-293 (English) 2000. CODEN: JCTLAS. ISSN: 0021-9517. Publisher: Academic Press.

AB The prepn. of a series of microporous zirconia-silica mixed oxides by sol-gel is reported. These were characterized by BET methods, thermogravimetric anal., X-ray diffraction anal., UV-vis spectroscopy, and temp.-programmed desorption of ammonia. The materials have high surface areas; they are amorphous and possess only mild surface acidity. They have been tested in the

oxidn. of different substrates with hydrogen peroxide, particularly the oxidn. of cyclohexene. The catalysts are moderately active and produce mainly products arising from oxirane ring opening, particularly when the reactions are carried out in the absence of solvent. The use of a less hydrophilic reaction medium and/or the partial methylation of the silica surface tend to increase the reaction productivity and reduce hydrogen peroxide consumption. (c) 2000 Academic Press.

- IT 1314-23-4P, Zirconia, preparation
 (catalysts; microporous zirconia-silica mixed oxides
 prepd. by sol-gel process as catalysts for liq.-phase
 oxidn. of olefins with hydrogen peroxide)
 RN 1314-23-4 HCA
 CN Zirconium oxide (ZrO2) (8CI, 9CI) (CA INDEX NAME)



- IT 2031-67-6, Methyltriethoxysilane
 (microporous zirconia-silica mixed oxides prepd. by sol-gel
 process as catalysts for liq.-phase oxidn. of
 olefins with hydrogen peroxide)
 RN 2031-67-6 HCA
 CN Silane, triethoxymethyl- (8CI, 9CI) (CA INDEX NAME)



- CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
 ST microporous zirconia silica catalyst oxidn
 olefin; cyclohexene oxidn catalyst zirconia
 silica
 IT Oxidation catalysts
 (microporous zirconia-silica mixed oxides prepd. by sol-gel
 process as catalysts for liq.-phase oxidn. of
 olefins with hydrogen peroxide)
 IT 1314-23-4P, Zirconia, preparation 7631-86-9P, Silica,
 preparation
 (catalysts; microporous zirconia-silica mixed oxides
 prepd. by sol-gel process as catalysts for liq.-phase
 oxidn. of olefins with hydrogen peroxide)
 IT 78-10-4, Tetraethoxysilane 98-85-1, 1-Phenylethanol 100-42-5,
 Styrene, reactions 100-51-6, Benzyl alcohol, reactions 110-83-8,
 Cyclohexene, reactions 563-79-1, 2,3-Dimethyl-2-butene 681-84-5,

- Tetramethoxysilane 931-88-4, Cyclooctene 2031-67-6,
Methyltriethoxysilane 23519-77-9, Zirconium propoxide
(microporous zirconia-silica mixed oxides prep. by sol-gel
process as **catalysts** for liq.-phase oxidn. of
olefins with hydrogen peroxide)
- IT 76-09-5P, 2,3-Dimethyl-2,3-dihydroxybutane 93-56-1P, Styrene
glycol 98-86-2P, Acetophenone, preparation 100-52-7P,
Benzaldehyde, preparation 822-67-3P, 2-Cyclohexen-1-ol
930-68-7P, 2-Cyclohexen-1-one 931-17-9P, 1,2-Cyclohexanediol
2979-24-0P, 2-Methoxycyclohexan-1-ol 4013-37-0P,
1,2-Dimethoxyethylbenzene 4277-32-1P, 1,2-Cyclooctanediol
51936-09-5P, 2,3-Dimethyl-3-methoxy-2-butanol
(microporous zirconia-silica mixed oxides prep. by sol-gel
process as **catalysts** for liq.-phase oxidn. of
olefins with hydrogen peroxide)
- L59 ANSWER 6 OF 12 HCA COPYRIGHT 2004 ACS on STN
- 133:335623 Production of amorphous, noble-metal-containing titanium
silicon mixed oxides for selective **oxidation** of
hydrocarbons to epoxides. Weisbeck, Markus; Schild, Christoph;
Wegener, Gerhard; Wiessmeier, Georg (Bayer Ag, Germany). Ger.
Offen. DE 19920753 A1 20001026, 10 pp. (German). CODEN: GWXXBX.
APPLICATION: DE 1999-19920753 19990423.
- AB In the manuf. of **catalysts** for the title reaction contg.
Au and(or) Ag particles and an amorphous Ti-Si mixed oxides,
domain-free latter oxides are manufd. by the sol-gel process. These
catalysts show improved retention of activity during use.
- IT 2031-67-6, Triethoxymethylsilane
(cocatalyst; prodn. of amorphous, noble-metal-contg. titanium
silicon mixed oxides using sol-gel processing for oxide prepn.
for selective **oxidn.** of hydrocarbons to epoxides)
- RN 2031-67-6 HCA
- CN Silane, triethoxymethyl- (8CI, 9CI) (CA INDEX NAME)
- $$\begin{array}{c}
 \text{OEt} \\
 | \\
 \text{EtO}-\text{Si}-\text{Me} \\
 | \\
 \text{OEt}
 \end{array}$$
- IT 13463-67-7P, Titanium oxide, preparation
(prodn. of amorphous, noble-metal-contg. titanium silicon mixed
oxides using sol-gel processing for oxide prepn. for selective
oxidn. of hydrocarbons to epoxides)
- RN 13463-67-7 HCA
- CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



- IC ICM B01J023-48
ICS C07D301-10; C07C045-33; C07C049-08
- CC 35-2 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 27, 67
- ST sol gel process titanium silicon oxide **catalyst** support
manuf; silver titanium silicon oxide **catalyst**
oxidn hydrocarbon epoxide manuf; **oxidn** hydrocarbon
epoxide manuf **catalyst** gold titanium silicon oxide
- IT Polysiloxanes, uses
(cocatalyst; prodn. of amorphous, noble-metal-contg. titanium
silicon mixed oxides using sol-gel processing for oxide prepn.
for selective **oxidn.** of hydrocarbons to epoxides)
- IT Silanes
(cocatalysts; prodn. of amorphous, noble-metal-contg. titanium
silicon mixed oxides using sol-gel processing for oxide prepn.
for selective **oxidn.** of hydrocarbons to epoxides)
- IT Group IIIA element oxides
Group IVA element oxides
Group VB element oxides
(dopants; prodn. of amorphous, noble-metal-contg. titanium
silicon mixed oxides using sol-gel processing for oxide prepn.
for selective **oxidn.** of hydrocarbons to epoxides)
- IT Sol-gel processing
(prodn. of amorphous, noble-metal-contg. titanium silicon mixed
oxides using sol-gel processing for oxide prepn. for selective
oxidn. of hydrocarbons to epoxides)
- IT 999-97-3, 1,1,1,3,3,3-Hexamethyldisilazane 2031-67-6,
Triethoxymethylsilane 9016-00-6, Polydimethylsiloxane
31900-57-9, Polydimethylsiloxane
(cocatalyst; prodn. of amorphous, noble-metal-contg. titanium
silicon mixed oxides using sol-gel processing for oxide prepn.
for selective **oxidn.** of hydrocarbons to epoxides)
- IT 1314-61-0P, Tantalum oxide
(dopant; prodn. of amorphous, noble-metal-contg. titanium silicon
mixed oxides using sol-gel processing for oxide prepn. for
selective **oxidn.** of hydrocarbons to epoxides)
- IT 1327-33-9P, Antimony oxide 1332-37-2P, Iron oxide, preparation
1344-28-1P, Aluminum oxide, preparation 7440-22-4P, Silver,
preparation 7440-57-5P, Gold, preparation 7631-86-9P, Silica,
preparation 13463-67-7P, Titanium oxide, preparation
(prodn. of amorphous, noble-metal-contg. titanium silicon mixed
oxides using sol-gel processing for oxide prepn. for selective
oxidn. of hydrocarbons to epoxides)
- IT 67-64-1P, Acetone, preparation 75-56-9P, Propylene oxide,
preparation 286-20-4P, Cyclohexene oxide 930-22-3P, Vinylloxirane

3266-23-7P, 2,3-Epoxybutane

(prodn. of amorphous, noble-metal-contg. titanium silicon mixed oxides using sol-gel processing for oxide prepn. for selective oxidn. of hydrocarbons to epoxides)

- IT 74-98-6, Propane, reactions 106-99-0, 1,3-Butadiene, reactions
110-83-8, Cyclohexene, reactions 115-07-1, Propene, reactions
624-64-6, trans-2-Butene
(prodn. of amorphous, noble-metal-contg. titanium silicon mixed oxides using sol-gel processing for oxide prepn. for selective oxidn. of hydrocarbons to epoxides)

L59 ANSWER 7 OF 12 HCA COPYRIGHT 2004 ACS on STN

131:171859 **Catalyst** for partial **oxidation** of unsaturated hydrocarbon to epoxide. Hayashi, Toshio; Wada, Masahiro; Haruta, Masatake; Tsubota, Susumu (Japan as Represented by Director-General of Agency of Industrial Science and, Japan; Nippon Shokubai Co., Ltd.). PCT Int. Appl. WO 9943431 A1 19990902, 64 pp. DESIGNATED STATES: W: CN, JP, KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 1999-JP753 19990219. PRIORITY: JP 1998-41833 19980224.

AB The **catalyst** with stable excellent performance comprises a silylated or hydrophobic titanium-contg. oxide fixed on fine gold particles. Thus, mixing and baking titanium tetrabutoxide fixed silica and silica gel mixt. gave a titanium-silicon compd. oxide, which was mixed with tetrachloroauric acid and baked to give a **catalyst**, then treated with methoxytrimethylsilane and used to **oxidize** trans-2-butene to 2,3-epoxy butane.

IT 13463-67-7P, Titania, preparation.
(**catalyst** for partial **oxidn.** of unsatd. hydrocarbon to epoxide)

RN 13463-67-7 HCA

CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



IT 1825-61-2, Methoxytrimethylsilane 2996-92-1, Phenyltrimethoxysilane 6843-66-9, Diphenyldimethoxysilane (silylation agent; **catalyst** for partial **oxidn.** of unsatd. hydrocarbon to epoxide)

RN 1825-61-2 HCA

CN Silane, methoxytrimethyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 2996-92-1 HCA

CN Silane, trimethoxyphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 6843-66-9 HCA

CN Silane, dimethoxydiphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IC ICM B01J023-52

ICS C07D301-04

CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)

Section cross-reference(s): 67

ST titania silica silylation oxidn catalyst epoxide

IT Epoxidation catalysts

(catalyst for partial oxidn. of unsatd.
hydrocarbon to epoxide)

IT Titanates

(catalyst for partial oxidn. of unsatd.
hydrocarbon to epoxide)

IT 13463-67-7P, Titania, preparation

(catalyst for partial oxidn. of unsatd.
hydrocarbon to epoxide)IT 75-56-9P, Propylene oxide, preparation 3266-23-7P, 2,3-Epoxybutane
204759-74-0P, Magnesium silicon titanium oxide(catalyst for partial oxidn. of unsatd.
hydrocarbon to epoxide)IT 115-07-1, Propylene, reactions 123-54-6D, Acetylacetone, titanium
complexes 624-64-6, trans-2-Butene 7440-32-6D, Titanium,

acetylacetone complexes, reactions 16903-35-8, Tetrachloroauric acid

(**catalyst** for partial oxidn. of unsatd. hydrocarbon to epoxide)

IT 7631-86-9, Snowtex N, uses

(colloidal; **catalyst** for partial oxidn. of unsatd. hydrocarbon to epoxide)

IT 546-68-9, Tetraisopropyltitanate 5593-70-4, Titanium tetrabutoxide

10377-60-3, Magnesium nitrate 65104-06-5

(for **catalyst**; **catalyst** for partial oxidn. of unsatd. hydrocarbon to epoxide)

IT 107-46-0 1825-61-2, Methoxytrimethylsilane

2996-92-1, Phenyltrimethoxysilane 6843-66-9,

Diphenyldimethoxysilane

(silylation agent; **catalyst** for partial oxidn. of unsatd. hydrocarbon to epoxide)

IT 7440-57-5P, Gold, preparation

(support; **catalyst** for partial oxidn. of unsatd. hydrocarbon to epoxide)

L59 ANSWER 8 OF 12 HCA COPYRIGHT 2004 ACS on STN

129:294420 Selective **oxidations** on vanadium oxide containing amorphous mixed oxides (AMM-V) with tert.-butylhydroperoxide. Deng, Y.; Hunnius, M.; Storck, S.; Maier, W. F. (Max-Planck-Inst. Kohlenforschung, Muelheim an der Ruhr, D-45470, Germany). DGMM Tagungsbericht, 9803(Proceedings of the DGMM-Conference "Selective Oxidations in Petrochemistry", 1998), 191-199 (English) 1998. CODEN: DGTAF7. ISSN: 1433-9013. Publisher: Deutsche Wissenschaftliche Gesellschaft fuer Erdoel, Erdgas und Kohle.

AB Amorphous mixed oxides were used for **catalytic oxidns.** To avoid interference with homogeneously **catalyzed** reactions, the study focused on selective **oxidns.** in a moisture-free medium with tBuOOH. The **catalytic** properties of isolated V centers in amorphous microporous materials based on SiO₂, TiO₂, ZrO₂, and Al₂O₃ as supports were investigated and the effects of surface polarity on the **oxidn.** of 1-octene and cyclohexane were studied. By cocondensation with MeSi(OEt)₃ the surface polarity of all materials were adjusted in the 1-step prepn. procedure. Although the TiO₂, ZrO₂, and Al₂O₃-based V mixed oxides showed remarkable activities and selectivities, the SiO₂-based ones were the best **catalysts** for the epoxidn. and **oxidn.** of cyclohexane.

IT 2031-67-6, TriethoxyMethylsilane

(selective **oxidn.** properties of vanadium oxide-contg. amorphous mixed oxides with tert.-butylhydroperoxide in relation to MeSi(OEt)₃-modified surface polarity)

RN 2031-67-6 HCA

CN Silane, triethoxymethyl- (8CI, 9CI) (CA INDEX NAME)



IT 1314-23-4, Zirconia, uses 13463-67-7, Titania,
uses
{support; selective oxidn. properties of vanadium
oxide-contg. amorphous mixed oxides with tert.-butylhydroperoxide
studied by octene and cyclohexane)
RN 1314-23-4 HCA
CN Zirconium oxide (ZrO2) (8CI, 9CI) (CA INDEX NAME)



RN 13463-67-7 HCA
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



CC 67-2 (Catalysis, Reaction Kinetics, and Inorganic Reaction
Mechanisms)
ST vanadium mixed oxide.oxidn.catalyst support;
selective oxidn catalyst vanadium oxide
cyclohexane; epoxidn catalyst vanadium oxide octene;
hydroperoxide oxidn vanadium oxide catalyst
support; surface polarity vanadium oxide catalyst
oxidn
IT Catalyst supports
{selective oxidn. properties of vanadium oxide
catalysts with tert.-butylhydroperoxide in relation to)
IT Epoxidation catalysts
{selective oxidn. properties of vanadium oxide-contg.
amorphous mixed oxides with tert.-butylhydroperoxide studied by
octene and cyclohexane)
IT Oxidation catalysts
{selective; selective oxidn. properties of vanadium
oxide-contg. amorphous mixed oxides with tert.-butylhydroperoxide
studied by octene and cyclohexane)
IT Polarity
{surface; selective oxidn. properties of vanadium
oxide-contg. amorphous mixed oxides with tert.-butylhydroperoxide

- in relation to MeSi(OEt)₃-modified)
- IT 75-91-2, tert.-Butylhydroperoxide
(oxidant; selective oxidn. properties of vanadium oxide-contg. amorphous mixed oxides with tert.-butylhydroperoxide studied by octene and cyclohexane)
- IT 2031-67-6, TriethoxyMethylsilane
(selective oxidn. properties of vanadium oxide-contg. amorphous mixed oxides with tert.-butylhydroperoxide in relation to MeSi(OEt)₃-modified surface polarity)
- IT 111-66-0, 1-Octene
(selective oxidn. properties of vanadium oxide-contg. amorphous mixed oxides with tert.-butylhydroperoxide studied by epoxidn. of)
- IT 11099-11-9, Vanadium oxide
(selective oxidn. properties of vanadium oxide-contg. amorphous mixed oxides with tert.-butylhydroperoxide studied by octene and cyclohexane)
- IT 110-82-7, Cyclohexane, reactions
(selective oxidn. properties of vanadium oxide-contg. amorphous mixed oxides with tert.-butylhydroperoxide studied by oxidn. of)
- IT 1314-23-4, Zirconia, uses 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 13463-67-7, Titania, uses
(support; selective oxidn. properties of vanadium oxide-contg. amorphous mixed oxides with tert.-butylhydroperoxide studied by octene and cyclohexane)

L59 ANSWER 9 OF 12 HCA COPYRIGHT 2004 ACS on STN

127:83477 Microporous amorphous mixed oxides, and manufacture of high-porosity oxide and mixed oxide catalysts. Maier, Wilhelm F. (Studiengesellschaft Kohle mbH, Germany). Ger. Offen. DE 19545042 Al 19970605, 13 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1995-19545042 19951202.

AB In dry form, the microporous amorphous mixed oxides have total surface area 20-1000 m²/g and contain 0.1-20 wt.% nonhydrolyzable org. groups. The high-porosity oxides and mixed oxides are manufd. by copolycondensing alkyl- or aryloxysilanes contg. nonhydrolyzable R' groups of type R'Si(OR)₃ (R = Me, Et, Me₂CHO, CnH₂n+1 and Ph, CnH₂nCl, CnH₂nNH₂, CnH₂nCOOH, CnH₂nOH, CnH₂nCF₃, CH₂CH:CH₂, CHCOCH₃, CH₂NR₄, o-, m-, p-functionalized aryl groups) with known components of the sol-gel process. The surface polarity of these high-porosity materials can be controlled independently of their compn., and these materials are suitable for use as, e.g., alkylation, ammoxidn., epoxidn., hydroxylation, and oxidn. catalysts.
A soln. of Si(EtO)₄ 8, MeSi(EtO)₃ 1.8, Ti(Me₂CHO)₄ 0.133 in 7.9 mL EtOH was contacted with 8N HCl 1.98 mL to give a gel that was heated to 65° at 0.2 degree/min under protective atm., kept at 65° for 3 h, heated to 250° at 0.2 degree/min under

protective atm., and kept at 250° for 3 h to give amorphous
 $\text{TiO}_2:79.2\text{SiO}_2:19.8\text{MeSiO}_1.5$ having surface area 545 m²/g and pore
 diam. 0.72 nm. These type of.

IT 1314-23-4, Zirconia, formation (nonpreparative)
 13463-67-7, Titania, formation (nonpreparative)
 (formation of; in high-porosity oxide and mixed oxide
catalyst manuf. by sol-gel process)

RN 1314-23-4 HCA

CN Zirconium oxide (ZrO₂) (8CI, 9CI) (CA INDEX NAME)



RN 13463-67-7 HCA

CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)



IT 78-07-9, Ethyltriethoxysilane 780-69-8,
 Phenyltriethoxysilane 1067-25-0, Propyltrimethoxysilane
 2031-67-6, Methyltriethoxysilane 3069-19-0,
 n-Hexyltrimethoxysilane 17980-47-1,
 Isobutyltriethoxysilane
 (in high-porosity microporous amorphous oxide and mixed oxide
catalyst manuf. by sol-gel process)

RN 78-07-9 HCA

CN Silane, triethoxyethyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 780-69-8 HCA

CN Silane, triethoxyphenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 1067-25-0 HCA

CN Silane, trimethoxypropyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



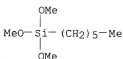
RN 2031-67-6 HCA

CN Silane, triethoxymethyl- (8CI, 9CI) (CA INDEX NAME)



RN 3069-19-0 HCA

CN Silane, hexyltrimethoxy- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 17980-47-1 HCA

CN Silane, triethoxy(2-methylpropyl)- (9CI) (CA INDEX NAME)



IC ICM C01B033-155

ICS C01G001-02; B01J035-10; B01J021-06; B01J021-04; B01J023-00;
B01J021-10; C03B008-02; C03C004-00; C07D301-19; C07D301-12

ICA B01J020-02; B01D071-02; B01D053-22

ICI B01J023-14; B01J101-42; B01J023-14; B01J101-50; B01J023-22,
B01J101-42

CC 49-3 (Industrial Inorganic Chemicals)

Section cross-reference(s): 45, 57

ST microporous amorphous mixed oxide **catalyst**;
alkylalkoxysilane hydrolysis mixed oxide; arylalkoxysilane

- hydrolysis mixed oxide; titania silica methylsilicon sesquioxide
catalyst; tetraethoxysilane hydrolysis mixed oxide;
 methyltriethoxysilane hydrolysis mixed oxide; titanium
 tetraisopropoxide hydrolysis mixed oxide
- IT Oxides (inorganic), formation (nonpreparative)
 Transition metal oxides
 (formation of; in high-porosity oxide and mixed oxide
catalyst manuf. by sol-gel process)
- IT Alkylation **catalysts**
 Epoxidation **catalysts**
 Hydroxylation **catalysts**
 Oxidation **catalysts**
 (high-porosity oxide and mixed oxide **catalyst** manuf.
 for)
- IT Aromatic hydrocarbons, processes
 (high-porosity oxide and mixed oxide **catalyst** manuf.
 for alkylation of)
- IT Metals, formation (nonpreparative)
 (in high-porosity oxide and mixed oxide **catalyst** manuf.
 by sol-gel process)
- IT 1314-23-4, Zirconia, formation (nonpreparative) 1344-28-1,
 Alumina, formation (nonpreparative) 7631-86-9, Silica, formation
 (nonpreparative) 13463-67-7, Titania, formation
 (nonpreparative)
 (formation of; in high-porosity oxide and mixed oxide
catalyst manuf. by sol-gel process)
- IT 108-94-1, Cyclohexanone, processes
 (high-porosity oxide and mixed oxide **catalyst** manuf.
 for ammoxidn. of)
- IT 108-95-2P, Phenol, preparation
 (high-porosity oxide and mixed oxide **catalyst** manuf.
 for benzene hydroxylation for manuf. of)
- IT 100-64-1P
 (high-porosity oxide and mixed oxide **catalyst** manuf.
 for cyclohexanone ammoxidn. for manuf. of)
- IT 111-66-0, 1-Octene 115-07-1, Propene, processes 4904-61-4,
 1,5,9-Cyclododecatriene
 (high-porosity oxide and mixed oxide **catalyst** manuf.
 for epoxidn. of)
- IT 71-43-2, Benzene, processes
 (high-porosity oxide and mixed oxide **catalyst** manuf.
 for hydroxylation of)
- IT 75-56-9P, Propylene oxide, preparation 50337-75-2P 69775-79-7P,
 Hexyl-tert-butyl ether
 (high-porosity oxide and mixed oxide **catalyst** manuf.
 for manuf. of)
- IT 75-91-2, tert-Butylhydroperoxide
 (high-porosity oxide and mixed oxide **catalyst** manuf.)

- for octene-1 epoxidn. with)
- IT 64-17-5, Ethanol, processes 100-41-4, Ethylbenzene, processes
108-88-3, Toluene, processes
(high-porosity oxide and mixed oxide **catalyst** manuf.
for selective oxidn. of)
- IT 75-07-0P, Acetaldehyde, preparation
(high-porosity oxide and mixed oxide **catalyst** manuf.
for selective oxidn. of ethanol for manuf. of)
- IT 7722-84-1P, Hydrogen peroxide, preparation
(high-porosity oxide and mixed oxide **catalyst** manuf.
for selective oxidns. with)
- IT 78-10-4, Tetraethoxysilane
(hydrolysis of; in high-porosity microporous amorphous oxide and
mixed oxide **catalyst** manuf. by sol-gel process)
- IT 78-07-9, Ethyltriethoxysilane 301-10-0 546-68-9,
Titanium tetrakisopropoxide 780-69-8, Phenyltriethoxysilane
993-02-2, Manganese(III) acetate 1067-25-0,
Propyltrimethoxysilane 1071-76-7, Zirconium tetra-n-butoxide
2031-67-6, Methyltriethoxysilane 2155-74-0, Antimony
tributoxide 2269-22-9, Aluminum tri-sec-butoxide 3069-19-0
, n-Hexyltrimethoxysilane 3153-26-2 14995-22-3, 2-Propanol,
iron(3+) salt 17980-47-1, Isobutyltriethoxysilane
23519-77-9 31087-39-5, Chromium tri-isopropoxide
(in high-porosity microporous amorphous oxide and mixed oxide
catalyst manuf. by sol-gel process)
- L59 ANSWER 10 OF 12 HCA COPYRIGHT 2004 ACS on STN
- 126:251568 Manufacture of phosphorus-vanadium oxide **catalyst**
precursors for gas-phase oxidation of hydrocarbons to
maleic anhydride. Tsurita, Yasushi; Ito, Masumi (Mitsubishi
Chemical Corp., Japan). Jpn. Kokai Tokkyo Koho JP 09052049 A2
19970225 Heisei, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
1995-209513 19950817.
- AB Title precursors, useful for manuf. of maleic anhydride from
hydrocarbons (preferably butane), are manuf. by reaction of
pentavalent V compds. with H3PO4 in the presence of R4-nSi(OR')n (R
= hydrocarbons; R' = H, alkyl; n = 1-3) and optionally ≥ 1
compds. of Fe, Co, Zn, or Zr in org. solvents, which at least
partially reduce pentavalent V compds. to tetravalent compds. Thus,
18.19 g V2O5 was treated with 23.76 g 99% H3PO4 in the presence of
26.46 g Et3SiOH in 2-methylpropanol and then filtrated to obtain a
catalyst precursor, which was treated at 550-600°,
molded, and crushed to give a **catalyst**. A butane-air
mixt. gas (butane content 4 mol%) was passed through a column filled
with the **catalyst** at 428° to give maleic anhydride
in 59.6% yield.
- IT 597-52-4, Triethylsilanol 1314-62-1, Vanadium
oxide, uses

(manuf. of composite oxide gas-phase **oxidn.**
catalyst precursors from vanadium compds., phosphoric
 acid, and alkoxysilanols)

RN 597-52-4 HCA

CN Silanol, triethyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 1314-62-1 HCA

CN Vanadium oxide (V2O5) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IC ICM B01J027-198

ICS C07B061-00; C07D307-60

CC 35-2 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 67

ST alkylsilanol vanadium oxide phosphoric acid **catalyst**; gas
 phase **oxidn catalyst** composite oxide; maleic
 anhydride manuf butane **oxidn catalyst**

IT Alcohols, uses

(C3-6, aliph.; manuf. of composite oxide gas-phase **oxidn.**
catalyst precursors from vanadium compds., phosphoric
 acid, and alkoxysilanols)

IT **Oxidation catalysts**

(gas-phase; manuf. of composite oxide gas-phase **oxidn.**
catalyst precursors from vanadium compds., phosphoric
 acid, and alkoxysilanols)

IT 597-52-4, Triethylsilanol 1314-62-1, Vanadium
 oxide, uses 7664-38-2, Phosphoric acid, uses

(manuf. of composite oxide gas-phase **oxidn.**
catalyst precursors from vanadium compds., phosphoric
 acid, and alkoxysilanols)

IT 108-31-6P, Maleic anhydride, preparation

(manuf. of composite oxide gas-phase **oxidn.**
catalyst precursors from vanadium compds., phosphoric
 acid, and alkoxysilanols)

IT 78-83-1, uses

(manuf. of composite oxide gas-phase **oxidn.**
catalyst precursors from vanadium compds., phosphoric
 acid, and alkoxysilanols)

IT 106-97-8, Butane, reactions

(manuf. of composite oxide gas-phase **oxidn.**
catalyst precursors from vanadium compds., phosphoric
 acid, and alkoxysilanols)

L59 ANSWER 11 OF 12 HCA COPYRIGHT 2004 ACS on STN

117:171542 Bistriphenylsilanol-assisted **oxidation**
catalyzed by chromium(VI) oxide of activated trimethylsilyl
 ethers with tert-butyl hydroperoxide. Muzart, Jacques; Ajjou,
 Abdelazia N'Ait (Unite Rech. Rearrangements Thermiques et
 Photochimiques, Univ. Reims Champagne-Ardenne, Reims, 51062, Fr.).
 Synthetic Communications, 22(14), 1993-6 (English) 1992. CODEN:
 SYNCAV. ISSN: 0039-7911. OTHER SOURCES: CASREACT 117:171542.

AB Secondary benzylic or allylic trimethylsilyl ethers are
oxidized at room temp. to the corresponding ketones in good
 yields using aq. 70% tert-BuOOH and **catalytic** amts. of a
 mixt. of Ph3SiOH and CrO3. Thus, reaction of PhCH(OSiMe3)R [R = Me,
 Et, Ph, (CH2)2CO2Me] in CH2Cl2 in the dark with the above reagent
 and **catalysts** afforded the ketones PhCOR in 93-99% yield.

IT 791-31-1, Triphenylsilanol
 (**catalyst** with chromium trioxide, for **oxidn.**
 of benzylic or allylic trimethylsilyl ethers to ketones)

RN 791-31-1 HCA

CN Silanol, triphenyl- (8CI, 9CI) (CA INDEX NAME)



IT 1333-82-0, Chromium trioxide
 (**catalyst**, with triphenylsilanol, for **oxidn.**
 of benzylic or allylic trimethylsilyl ethers to ketones)

RN 1333-82-0 HCA

CN Chromium oxide (CrO3) (8CI, 9CI) (CA INDEX NAME)



CC 29-6 (Organometallic and Organometalloidal Compounds)
 Section cross-reference(s): 23

ST **oxidn** trimethylsilyl ether chromium trioxide
catalyst; ketone; chromium trioxide triphenyl silanol
catalyst oxidn

IT **Oxidation catalysts**
 (chromium trioxide and triphenylsilanol, for activated
 trimethylsilyl ethers with tert-Bu hydroperoxide)

IT **Oxidation**

(of benzylic or allylic trimethylsilyl ethers in presence of chromium trioxide and triphenylsilanol, ketones from)

- IT Ketones, preparation
(prepn. of, by **catalytic oxidn.** of activated trimethylsilyl ethers)
- IT Ethers, reactions
(trimethylsilyl, **oxidn.** of, with tert-Bu hydroperoxide in presence of chromium trioxide and triphenylsilanol)
- IT 791-31-1, Triphenylsilanol
(**catalyst** with chromium trioxide, for **oxidn.** of benzylic or allylic trimethylsilyl ethers to ketones)
- IT 1333-82-0, Chromium trioxide
(**catalyst**, with triphenylsilanol, for **oxidn.** of benzylic or allylic trimethylsilyl ethers to ketones)
- IT 143878-48-2P
(formation of, in **catalytic oxidn.** of (methoxyphenyl)trimethylsilyloxyoctane)
- IT 75-91-2, tert-Butyl hydroperoxide
(**oxidn.** by, of benzylic or allylic trimethylsilyl ethers in presence of chromium oxide and triphenylsilanol)
- IT 14629-59-5 14856-75-8 62559-30-2 106543-48-0 136116-39-7
136116-40-0 136116-41-1
(**oxidn.** of, to ketone, **catalyst** for)
- IT 143878-46-0
(**oxidn.** of, with hydroperoxide in presence of chromium trioxide and triphenylsilanol)
- IT 93-55-0P, Ethyl phenyl ketone 98-86-2P, Acetophenone, preparation
119-61-9P, Diphenyl ketone, preparation
(prepn. of, from **catalytic oxidn.** of benzylic trimethylsilyl ether)

L59 ANSWER 12 OF 12 HCA COPYRIGHT 2004 ACS on STN

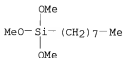
- 116:224477 Photooxidative degradation of the pesticide permethrin **catalyzed** by irradiated titania semiconductor slurries in aqueous media. Hidaka, Hisao; Nohara, Kayo; Zhao, Jincai; Serpone, Nick; Pelizzetti, Ezio (Dep. Chem., Meisei Univ., Tokyo, 191, Japan). Journal of Photochemistry and Photobiology, A: Chemistry, 64(2), 247-54 (English) 1992. CODEN: JPPCEJ. ISSN: 1010-6030.
- AB Permethrin, the organochlorine pesticide, can be photodegraded into Cl⁻ and CO₂ with TiO₂ semiconductor **catalyst**. The arom. moiety in permethrin is easily cleaved via apparent 1st-order kinetics. The arom.-ring opening rate (1.73 + 10⁻³ min⁻¹) is nearly identical with the dechlorination rate (1.82 + 10⁻³ min⁻¹). The presence of the TiO₂ **catalyst**, UV irradiation and O₂ gas are essential for photooxidation at a reasonable rate. The insol. permethrin (in H₂O) can be efficiently photodegraded in a TiO₂ slurry of hexane-H₂O mixt. under solar exposure with high conversion (>90%), even at high concn. (17000 ppm), in 8 h. The

hydrophobic TiO₂ **catalyst** (T-805) modified by octyltrimethoxysilane shows better photocatalytic activity than the pure TiO₂ (P-25).

- IT 13463-67-7, Titania, properties
(photocatalyst, in photodegrdn. of permethrin)
RN 13463-67-7 HCA
CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)



- IT 3069-40-7
(titania powder modification using, photodegrdn. of permethrin
catalyzed by)
RN 3069-40-7 HCA
CN Silane, trimethoxyoctyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



- CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 5
ST photooxidn pesticide permethrin titania **catalyst**;
photodegrdn pesticide permethrin titania **catalyst**;
photolysis pesticide permethrin titania **catalyst**;
photocatalysis pesticide permethrin **oxidative** degrdn
IT **Oxidation**, photochemical
(of permethrin, **catalyzed** by titania, improvement of
catalytic activity by modification with
octyltrimethoxysilane in)
IT Pesticides
(photodegrdn. of, **catalyzed** by titania)
IT Photolysis **catalysts**
(titania, modified by octyltrimethoxysilane, in degrdn. of
pesticide permethrin)
IT **Catalysts and Catalysis**
(photochem., oxidn. of permethrin, modification of
titania **catalyst** by octyltrimethoxysilane in)
IT 124-38-9P, Carbon dioxide, preparation 16887-00-6P, Chloride,
preparation
(formation of, in photodegrdn. of permethrin, **catalyzed**
by titania)
IT 13463-67-7, Titania, properties

- (photocatalyst, in photodegrdn. of permethrin)
- IT 110-54-3, Hexane, properties 7722-84-1, Hydrogen peroxide (H₂O₂), properties 7727-37-9, Nitrogen, miscellaneous (photodegrdn. of permethrin **catalyzed** by titania in presence of)
- IT 7732-18-5, Water, properties (photodegrdn. of pesticide permethrin **catalyzed** by titania in)
- IT 52645-53-1, Permethrin (photodegrdn. of, **catalyzed** by titania)
- IT **3069-40-7** (titania powder modification using, photodegrdn. of permethrin **catalyzed** by)

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- L60 ANSWER 1 OF 25 HCA COPYRIGHT 2004 ACS on STN
TI Fe₂O₃-SiO₂ nanocomposites obtained by different sol-gel routes
- L60 ANSWER 2 OF 25 HCA COPYRIGHT 2004 ACS on STN
TI Siloxane-anchored thin films on silicon dioxide-modified stainless steel
- L60 ANSWER 3 OF 25 HCA COPYRIGHT 2004 ACS on STN
TI Self-Assembled Monolayers Supported on TiO₂: Comparison of C₁₈H₃₇SiX₃ (X = H, Cl, OCH₃), C₁₈H₃₇Si(CH₃)₂Cl, and C₁₈H₃₇PO(OH)₂
- L60 ANSWER 4 OF 25 HCA COPYRIGHT 2004 ACS on STN
TI Photostable sunscreen compositions containing Kaempferia galanga extracts
- L60 ANSWER 5 OF 25 HCA COPYRIGHT 2004 ACS on STN
TI Manufacture of sintered oxide-type ceramic molding material used for dental fillings
- L60 ANSWER 6 OF 25 HCA COPYRIGHT 2004 ACS on STN
TI Composition and method of making a ferrofluid with chemical stability
- L60 ANSWER 7 OF 25 HCA COPYRIGHT 2004 ACS on STN
TI Structure of hybrid (organic/inorganic) TiO₂-SiO₂ xerogels. II: thermal behavior as monitored by temperature-programmed techniques and spectroscopy
- L60 ANSWER 8 OF 25 HCA COPYRIGHT 2004 ACS on STN
TI **Oxidative** deprotection of trimethylsilyl ethers to carbonyl compounds with PdCl₂(PhCN)₂-CrO₃ and clay-

bis(trimethylsilyl) chromate in solventless system

- L60 ANSWER 9 OF 25 HCA COPYRIGHT 2004 ACS on STN
TI Amperometric detection of carbohydrates by capillary electrophoresis with a cuprous oxide modified sol-gel carbon composite electrode
- L60 ANSWER 10 OF 25 HCA COPYRIGHT 2004 ACS on STN
TI Process and composition for producing a magnetic fluid
- L60 ANSWER 11 OF 25 HCA COPYRIGHT 2004 ACS on STN
TI Water-in-oil emulsion cosmetics
- L60 ANSWER 12 OF 25 HCA COPYRIGHT 2004 ACS on STN
TI Porous silica-based ceramic composite parts and their manufacture for gas separation
- L60 ANSWER 13 OF 25 HCA COPYRIGHT 2004 ACS on STN
TI Hydrophobic treatment of pigments for drier pigments, method of pigment treatment, pigment dispersions and use in inks
- L60 ANSWER 14 OF 25 HCA COPYRIGHT 2004 ACS on STN
TI Fluorescence detection and electrochemistry in hybrid zirconia xerogels including chromophores or electroactive species
- L60 ANSWER 15 OF 25 HCA COPYRIGHT 2004 ACS on STN
TI Reproducible receptor paper for thermal-transfer printing or electrophotography
- L60 ANSWER 16 OF 25 HCA COPYRIGHT 2004 ACS on STN
TI Electrostatographic developer toner containing polyolefin wax antioffset agent
- L60 ANSWER 17 OF 25 HCA COPYRIGHT 2004 ACS on STN
TI Manufacture of solid electrolytic capacitor using polymer electrolyte
- L60 ANSWER 18 OF 25 HCA COPYRIGHT 2004 ACS on STN
TI Chemically stable magnetic fluid composition and its preparation
- L60 ANSWER 19 OF 25 HCA COPYRIGHT 2004 ACS on STN
TI Treatment of transition metal containing pigments with chelating or silylating compounds
- L60 ANSWER 20 OF 25 HCA COPYRIGHT 2004 ACS on STN
TI Modified metal oxide layer as support for active materials and reagents
- L60 ANSWER 21 OF 25 HCA COPYRIGHT 2004 ACS on STN

- TI Materials and methods for enhanced photocatalysis of organic compounds in oil spill treatment
- L60 ANSWER 22 OF 25 HCA COPYRIGHT 2004 ACS on STN
TI Graphite composite products and their manufacture
- L60 ANSWER 23 OF 25 HCA COPYRIGHT 2004 ACS on STN
TI Silver oxide battery electrodes
- L60 ANSWER 24 OF 25 HCA COPYRIGHT 2004 ACS on STN
TI Derivatographic study of poly(diorganosiloxane) rubbers
- L60 ANSWER 25 OF 25 HCA COPYRIGHT 2004 ACS on STN
TI Peroxo compounds. XI. Nonradical substitution and redox reactions of bis(trimethylsilyl) peroxide

=> d 160 2,19,20 cbib abs hitstr hitind

- L60 ANSWER 2 OF 25 HCA COPYRIGHT 2004 ACS on STN
139:233306 Siloxane-anchored thin films on silicon dioxide-modified stainless steel. Meth, Sergio; Sukenik, Chaim N. (Chemistry Department, Bar-Ilan University, Ramat-Gan, 52900, Israel). Thin Solid Films, 425(1-2), 49-58 (English) 2003. CODEN: THSFAP. ISSN: 0040-6090. Publisher: Elsevier Science B.V..
- AB Siloxane-anchored self-assembled monolayers were obtained on stainless steel. Initially the surface of the material was treated with tetraalkylorthosilicate to obtain a thin layer of SiO₂ (<3 nm). This layer effectively anchors the subsequent attachment of alkyltrialkoxysilanes like octadecyltrimethoxysilane. Some of the versatility of this approach was demonstrated by depositing thioacetate (TA)-hexadecyltrimethoxysilane on SiO₂-modified stainless steel and forming a TA functionalized film. In situ oxidn. of the TA groups yielded a sulfonate-functionalized surface that was used to promote deposition of an adherent, pore-free, TiO₂ layer from aq. soln. onto the stainless steel substrate.
- IT 13463-67-7, Titania, processes
(deposition of titania on thioacetate hexadecyltrimethoxysilane self-assembled monolayers on silica-modified stainless steel)
- RN 13463-67-7 HCA
- CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)

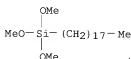


- IT 3069-42-9D, Octadecyltrimethoxysilane, silica-bound
(self-assembled monolayer; siloxane-anchored self-assembled

monolayers on silica-modified stainless steel)

RN 3069-42-9 HCA

CN Silane, trimethoxyoctadecyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



CC 55-6 (Ferrous Metals and Alloys)

IT 13463-67-7, Titania, processes
(deposition of titania on thioacetate hexadecyltrimethoxysilane
self-assembled monolayers on silica-modified stainless steel)

IT 3069-42-9D, Octadecyltrimethoxysilane, silica-bound
(self-assembled monolayer; siloxane-anchored self-assembled
monolayers on silica-modified stainless steel)

L60 ANSWER 19 OF 25 HCA COPYRIGHT 2004 ACS on STN

126:318493 Treatment of transition metal containing pigments with
chelating or silylating compounds. Kwan, Wing Sum Vincent (General
Electric Co. PLC, UK). PCT Int. Appl. WO 9712944 A1 19970410, 34
pp. DESIGNATED STATES: W: CA, JP, MX; RW: AT, BE, CH, DE, DK, ES,
FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN:
PIXXD2. APPLICATION: WO 1996-GB2415 19961002. PRIORITY: US
1995-4701 19951003; US 1996-588215 19960118; US 1996-653357
19960524.

AB A surface derivatizing agent having an α,γ -diketo
moiety, a β -hydroxy acid moiety, a hydroxamic acid moiety, a
phosphonic acid moiety, or a phenolic moiety, or that is a
trimethylsilyl donor, is allowed to contact an aq. slurry of pigment
particles selected from the group consisting of transition metal
contg. pigment particles, transition metal oxide contg. pigment
particles, and complexes of transition metals or transition metal
oxides, to increase the hydrophobicity of the surface of such
particles. The modified pigment particles disperse easily in a wide
variety of org. solvents and provide stable dispersions having a
small mean pigment particle size and narrow particle size
distribution. This treatment enhances the color of the pigment in
coatings and inks and the resistance of the pigment to moisture, air
oxidn., acids, and bases.

IT 1825-62-3, Trimethylethoxysilane
(treatment of transition metal contg. pigments with chelating or
silylating compds. to increase hydrophobicity)

RN 1825-62-3 HCA

CN Silane, ethoxytrimethyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



- IT 1309-37-1, Red iron oxide, properties 1314-13-2,
Zinc oxide, properties
(treatment of transition metal contg. pigments with chelating or
silylating compds. to increase hydrophobicity)
- RN 1309-37-1 HCA
- CN Iron oxide (Fe2O3) (8CI, 9CI) (CA INDEX NAME)
- *** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
- RN 1314-13-2 HCA
- CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)
- O=Zn
- IC ICM C09C003-08
- ICS C09C003-12; C09C001-24; C09C001-20; C09C001-00; C09C001-62;
C09C001-04
- CC 42-6 (Coatings, Inks, and Related Products)
- ST pigment transition metal hydrophobization; coating ink hydrophobized
pigment; base resistant transition metal pigment; acid resistant
transition metal pigment; oxidn resistant transition metal
pigment; moisture resistant transition metal pigment; silyl compd
treatment transition metal pigment; phenolic compd treatment
transition metal pigment; phosphonic acid treatment transition metal
pigment; hydroxamic acid treatment transition metal pigment; hydroxy
acid treatment transition metal pigment; diketo compd treatment
transition metal pigment; dispersibility enhanced pigment solvent
- IT 75-77-4, Trimethylchlorosilane, uses 104-40-5, 4-Nonylphenol
118-93-4 123-54-6, 2,4-Pentanedione, uses 137-99-5,
2,4-Dinonylphenol 141-97-9, Ethyl acetoacetate 999-97-3,
Hexamethyldisilazane 1450-14-2, Hexamethyldisilane
1825-62-3, Trimethylethoxysilane 2083-91-2,
Trimethylsilyldimethylamine 3318-61-4, 1-Phenyl-2,4-pentanedione
10416-59-8, Bis-N,O-trimethylsilylacetamide 11099-06-2, Ethyl
silicate 12656-85-8, Molybdate orange 13257-81-3,
2-Trimethylsiloxy-pent-2-en-4-one 18156-74-6,
Trimethylsilylimidazole
(treatment of transition metal contg. pigments with chelating or
silylating compds. to increase hydrophobicity)
- IT 1309-37-1, Red iron oxide, properties 1314-13-2,
Zinc oxide, properties 1332-37-2, Iron oxide, properties
1344-37-2, Chrome yellow 1345-16-0, Cobalt blue 12227-89-3,

Black iron oxide 14038-43-8, Milori blue
(treatment of transition metal contg. pigments with chelating or
silylating compds. to increase hydrophobicity)

- L60 ANSWER 20 OF 25 HCA COPYRIGHT 2004 ACS on STN
122:59438 Modified metal oxide layer as support for active materials and
reagents. Boettcher, Horst; Kallies, Karl-Heinz (Germany). Ger.
Offen. DE 4308146 A1 19940922, 14 pp. (German). CODEN: GWXXBX.
APPLICATION: DE 1993-4308146 19930315.
AB Metal oxide layers (Al₂O₃, SiO₂, TiO₂) are treated with penetrating
agents (salts, orgs., polymers) during formation from gases (CVD,
PVD) or solns. (sol-gel process), to increase the porosity of the
layer or to change the structure of the layer to increase the
absorptivity for active materials. The layers are useful in
cosmetics, chem. anal., medical diagnosis, pharmaceuticals.
IT 2031-67-6 13463-67-7, Titania, uses
(modified metal oxide layer as support for active materials and
reagents)
RN 2031-67-6 HCA
CN Silane, triethoxymethyl- (8CI, 9CI) (CA INDEX NAME)



- RN 13463-67-7 HCA
CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)



- IC ICM B01J020-06
ICS B01J020-08; B01J020-10; C23C014-08; C23C016-40; C04B041-80;
C04B035-00; C12Q001-00; A61K047-02; A61K007-021; A01N025-08;
G01N031-00
ICA B01J020-32; C12Q001-54; C12N011-14; A61K009-28; A61K009-16;
A61K031-44; A01N037-02
CC 48-11 (Unit Operations and Processes)
Section cross-reference(s): 9, 62, 63, 80
IT 9001-37-0, Glucose oxidase 9003-99-0, Peroxidase
(in sensors for detn. of; modified metal oxide layer as support
for active materials and reagents)
IT 69-72-7, Salicylic acid, uses 78-10-4 81-88-9, Rhodamine B
82-18-8 112-39-0, Palmitic acid methyl ester 147-14-8, Copper
phthalocyanine 555-31-7, Aluminum triisopropylate 1344-28-1,

Alumina, uses **2031-67-6** 3087-36-3,
Tetraethylorthotitanate 5423-07-4, Nitrazine yellow 7631-86-9,
Silica, uses 7681-49-4, Sodium fluoride, uses 7758-95-4, Lead
chloride 10043-35-3, Boric acid, uses **13463-67-7**,
Titania, uses 21829-25-4, Nifedipine 56499-51-5, Azocarmine
(modified metal oxide layer as support for active materials and
reagents)